Fishery Data Series No. 17-08

Subsistence and Personal Use Salmon Harvests in the Alaska Portion of the Yukon River Drainage, 2013

by

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and

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April 2017

Alaska Department of Fish and Game **Divisions of Sport Fish and Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols	
alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat or long
monetary symbols (U.S.)	$, ¢
months (tables and figures): first three letters	Jan,...,Dec
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations	
alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	$\log_2$, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

FISHERY DATA SERIES NO. 17-08

SUBSISTENCE AND PERSONAL USE SALMON HARVESTS IN THE ALASKA PORTION OF THE YUKON RIVER DRAINAGE, 2013

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ABSTRACT

This annual report contains estimates of subsistence and personal use salmon harvests within the Alaska portion of the Yukon River drainage. Most Yukon Area communities have no regulatory requirements to report their subsistence salmon harvest. For these remote communities, the Alaska Department of Fish and Game used a voluntary survey program. Harvest information was collected through postseason household interviews, follow-up telephone interviews, postal questionnaires, and harvest calendars. Stratified random sampling techniques were used to select Yukon Area households to be interviewed. In 2013, a total of 1,193 households were surveyed in 33 communities. Data from surveyed households were expanded to estimate the harvest of unsurveyed households. In more accessible portions of the Yukon Area, fishermen are required to document their harvest on a subsistence or personal use permit. In 2013, 435 subsistence and personal use permits were issued, and 95% were returned. Of these returned permits, 222 reported fishing. This report also documents subsistence salmon given to households from various test fishery projects. The total subsistence and personal use harvest throughout the Yukon Area was estimated to be 12,575 Chinook *Oncorhynchus tshawytscha*, 115,252 summer chum *O. keta*, 113,767 fall chum *O. keta*, and 14,566 coho *O. kisutch* salmon. The primary fishing gear types used were drift gillnets (47%), set gillnets (45%), fish wheels (7%), and other (<1%). Approximately 1,774 households owned 5,007 dogs and 244 households fed an estimated 99,447 salmon to dogs.

Key words: Chinook *Oncorhynchus tshawytscha*, chum *O. keta*, and coho salmon *O. kisutch*, northern pike *Esox lucius*, inconnu *Stenodus leucichthys*, whitefish *Coregonus* spp., harvest, personal use, subsistence, Tanana River, Yukon River

INTRODUCTION

Since 1961, the Alaska Department of Fish and Game (ADF&G) has collected information on subsistence salmon harvests Alaska portion of the Yukon River drainage (Yukon Area). Subsistence harvest estimates provide a record of historical harvest which can be used to observe trends. Annual documentation of the subsistence salmon harvest is used in conjunction with commercial, sport, and personal use harvests and escapement estimates to calculate total run size. Harvest and escapement information combined with age composition is used to construct brood tables and estimate the number of returning offspring per spawner for some stocks. Subsistence harvest information may also be used, in conjunction with other harvest and escapement information, to forecast future salmon returns and provide an outlook on fisheries management in the coming year.

Yukon Area communities have a long tradition of harvesting salmon for subsistence use and fishing activities are usually based from a fish camp or a home community within the drainage. Extended family groups, representing 2 or more households, often work together to harvest, cut, and preserve salmon for subsistence use. Some households from Yukon River tributary communities, such as Shageluk and Venetie, may operate or share in the operation of fish camps along the mainstem Yukon River (Figure 1). Subsistence salmon harvested for human consumption are commonly dried, smoked, canned, or frozen. Subsistence salmon fishing activities in the Yukon Area typically begin in late May and continue through early October. Salmon fishing in May and October is highly dependent upon river ice conditions.

Residents of the Yukon Area are primarily of Yup'ik Eskimo and Athabascan Indian descent. Excluding the Fairbanks North Star Borough (approximately 99,550 people), the most recent census indicates the population of rural Yukon Area residents within the Denali Borough, Southeast Fairbanks, Yukon-Koyukuk, and Kusilvak Census Areas was approximately 22,460 people in 2013. The 2008–2012 average rural population in the Yukon Area has remained relatively stable at approximately 22,270 people (Hunsinger 2015).

Subsistence and personal use fishermen in the Yukon Area primarily use drift gillnets, set gillnets, and fish wheels to harvest salmon. Set gillnets are used to harvest salmon throughout the Yukon Area, whereas drift gillnets are only allowed from the mouth of the Yukon River to approximately 18 miles below the community of Galena (River Mile 530). State regulations (Alaska Administrative Code (AAC): 5 AAC 01.220 and 5 AAC 77.717 Lawful Gear) were based on traditional practices. Under federal regulation 100.27 (i) (3) (XV) (C) drift gillnets were allowed in federal waters of Subdistricts 4-B and 4-C (near the communities of Galena and Ruby) during weekly subsistence openings from June 10 to July 14 (Estensen et al. 2015). Although fish wheels are a legal gear type for subsistence fishing throughout the drainage, they are essentially used only in the Upper Yukon Area where river conditions and fishing locations are more suitable.

Commercial fishermen are required to have a valid limited entry commercial fishing permit to participate in commercial fisheries, whereas any Alaska state resident may participate in subsistence salmon fisheries. Yukon Area fishermen often participate in both commercial and subsistence salmon fisheries. Income from commercial fishing is often used by households to help buy items associated with subsistence harvesting activities, including fuel and fishing equipment. Alaska state law dictates that subsistence is the highest priority use of salmon and a primary consideration in fishery management actions. Salmon and their eggs harvested during subsistence openings cannot be legally bought or sold under the State of Alaska regulations, but commercially harvested salmon may be retained for subsistence use. In some areas, subsistence fishing periods are separated from commercial fishing by closures before, during, and after commercial periods, whereas in other areas subsistence and commercial fishing occurs concurrently. Commercial fisheries in the Yukon Area are primarily opened in areas near fish buyer and processor operations where fishermen have a market for their catch.

Subsistence fishermen are not required to have a fishing permit in most of the Yukon River drainage; however, permits are required for subsistence or personal use fishing in parts of the Koyukuk, Tanana and upper Yukon rivers that are accessible by road (Figure 1). Where permits are not required, voluntary household surveys are conducted in each community in order to estimate the subsistence harvest. In contrast, fishermen in areas where permits are required must submit their harvest records annually.

Personal use fishing permits are available for the Fairbanks nonsubsistence area. Nonsubsistence areas are defined as areas where subsistence is not a principal characteristic of the economy, culture, and way of life (Alaska Statute 16.05.258(c)). The priority for personal use harvests are similar to that of commercial and sport fisheries and are a lower priority than subsistence fishing. The Fairbanks Nonsubsistence Area was established in 1992 (Figure 2) due to the potential heavy demand urban fishermen could place on the resource. Since 1995, personal use fishing has been open in nonsubsistence areas to all Alaska residents, regardless of where they reside. In the nonsubsistence area, fishermen must possess a personal use household permit and a resident sport fish license to participate in the fishery. Individual households have annual possession limits, and the personal use fishery has a total harvest limit of 750 Chinook *Oncorhynchus tshawytscha* and 5,000 chum *O. keta* salmon taken through August 15 and 5,200 chum and coho *O. kisutch* salmon combined taken after August 16. Personal use fishing will close if total harvest limits are reached (5 AAC 77.172). Fishermen who harvested salmon in a portion of Subdistrict 6-B, or all of Subdistrict 6-C, were required to report their catch on a weekly basis for inseason fishery management purposes.

Subsistence-caught salmon are primarily used for human consumption, but may also be fed to dogs, particularly sled dogs. During the active fishing season households throughout the Yukon Area feed scraps from salmon processing to sled dogs and other dogs. The practice of keeping sled dogs is less common in the Lower Yukon Area (Districts 1–3); therefore relatively few whole salmon are fed to dogs in this area. Harvesting salmon for primary consumption by sled dogs is more common in the Upper Yukon Area (Districts 4–6; Figure 1). Sled dogs are used for recreation, transportation, and as haul animals. Summer chum, fall chum, and coho salmon are primarily harvested to feed dogs in the Upper Yukon Area (Andersen and Scott 2010). Most of the subsistence salmon used for dog food are dried summer chum salmon or "cribbed" (frozen in the open air) fall chum and coho salmon. Salmon retained for dog food is an important component of the subsistence harvest and was found to constitute between 25% and 92% of all fish species fed to sled dogs among 6 Yukon River communities (Andersen and Scott 2010). Because Chinook salmon are so prized for human use, a regulation was added in 2001 stating that only Chinook salmon that are small (under 16 inches in length) or unfit for human consumption may be fed to dogs (5 AAC 01.240(d)).

The use of dogs as winter transportation reached its peak between the mid-19th century and the 1940s. Fur trading, gold mining, and the development of towns and settlements throughout interior and northern Alaska were primarily serviced by commercial dog teams. Dogs reported on the survey were not categorized by whether or not they were used for transportation or were kept as pets. An estimated 1 million salmon were fed to 6,000 working dogs in the Yukon River drainage in 1918 (Andersen and Scott 2010). A gradual reduction in the need for salmon as dog food began around 1930, when airplanes began replacing sled dogs as the primary mail and supply carrier. This decline accelerated in the 1960s with the introduction of snow machines to Interior Alaska. Beginning in the early 1980s, there was a renewed interest in recreational use and racing of sled dogs, and the number of subsistence salmon harvested for dog food increased; however, from 1991 to 2008 there was a decline in the number of households with dog teams (Andersen and Scott 2010). The average number of salmon fed to dogs annually from 1990 to 1999 was over 202,000 fish. From 2000 to 2009, the average number of salmon fed to dogs annually was around 65,000 fish (Borba and Hamner 2001; Busher et al. 2007; Jallen et al. 2012). The decline was due in part to poor chum salmon runs from 1998 to 2002, a reduction in carcasses left over from roe fisheries, and the steep rise in cost of equipment (boat, motor, nets, fuel) needed to harvest fish for dog food. Salmon fed to dogs continue to make up a large proportion of the total number of salmon harvested for subsistence (Borba and Hamner 2001; Busher et al. 2007; Jallen et al. 2012).

Many of the fishing regulations implemented on the Yukon River prior to statehood were concerned with protecting subsistence harvests by restricting commercial fishing activities. Commercial fishing operations were first recorded in Canada from the Yukon Territory in 1903 and in the Lower Yukon Area in 1918 (Walker et al. 1989; Whitmore et al. 1990). Complaints about shortages of salmon for subsistence harvests led to increased research efforts, however these projects were not uniform or continuously carried out year to year. The earliest known count of subsistence harvest consisted of a partial survey in 1918. Commercial fishing regulations in the Yukon Area exist at least since 1919, when limits were imposed on the number of cases of canned salmon that could be commercially produced (Pennoyer et al. 1965). Large commercial harvests from 1918 to 1922 prompted complete closures of commercial fishing in the Lower Yukon Area from 1925 to 1931 to protect upriver subsistence fisheries. To improve understanding of subsistence and commercial fishing impacts on salmon stocks and the ability of

residents to meet harvest needs, information on subsistence salmon harvests in the Yukon River has been collected or analyzed by the State of Alaska since 1958; however, survey methods from 1958 to 1960 were not documented. Methods from 1961 to 1987 varied from year to year, and included a 1961 survey by 2 Fish and Game aides who traveled by boat from the mouth of the Yukon River to Dawson City enumerating fish on drying racks and in smoke houses (Pennoyer et al. 1962).

The 2013 subsistence salmon harvest survey and permit programs collected quantitative information on salmon harvest by species. The primary method of estimating Yukon Area subsistence harvest was the annual door to door postseason salmon harvest survey. Other information collected included gear types used to harvest salmon, harvest distribution, non-salmon species harvest, number of dogs, and number of salmon fed to dogs. Qualitative information was also collected from households about salmon health and quality, subsistence fishing success, and fishery concerns. This report documents the estimated subsistence and personal use harvests within the Alaska portion of the Yukon River drainage during the 2013 season.

STUDY AREA

Postseason household surveys were conducted in 33 communities within the Yukon Area, representing non-road accessible communities and areas of the drainage. Road accessible communities on the Yukon and Koyukuk rivers and all communities along the Tanana River were excluded from the household surveys (harvests are documented on permits). The Yukon Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula (Figure 1). For management purposes, the Yukon Area is divided into 7 districts and 10 subdistricts. The Lower Yukon Area consists of coastal waters and the Yukon River drainage from its mouth upstream to Old Paradise Village (river mile 301) and is composed of Districts 1, 2, and 3. The Upper Yukon Area consists of the Yukon River drainage upstream of Old Paradise Village to the Canada border (river mile 1,224) and is divided into Districts 4, 5, and 6. The Upper Yukon Area includes 3 large (>400 miles) silt laden tributaries where harvests occur: Koyukuk, Tanana, and Porcupine rivers. The Coastal District includes the remainder of coastal Yukon Area waters not included in District 1 and encompasses the communities of Scammon Bay and Hooper Bay (Figure 1). The harvest from Coastal District communities may contain fish not necessarily Yukon River bound (Kerkvliet 1986). Two communities within the Yukon Area, Chevak and Arctic Village, are not included in this harvest survey based on their distance from the Yukon River proper and their historic harvest of very few salmon. In this report, the difference between the designations “Yukon River” and “Yukon Area” is that the Yukon Area includes the Coastal District. Yukon River totals apply to data considered for the U.S./Canada border passage objectives.

The Yukon River drainage supports 5 species of Pacific salmon: Chinook, chum, coho, pink *O. gorbuscha*, and sockeye *O. nerka* salmon. The majority of subsistence and personal use harvests are made up of Chinook, chum, and coho salmon. The chum salmon return consists of 2 temporally and genetically distinct stocks: early or summer chum and late or fall chum salmon. Chinook and summer chum salmon enter the Yukon River first, and are later followed by fall chum and coho salmon, with a period between when very few salmon are present. Pink salmon are only present and available for harvest in the lower and middle Yukon up to the community of Anvik (river mile 315). Sockeye salmon harvest in the Yukon River averaged less than 400 fish

per year from 2004 to 2013 (Appendix B13). Access to salmon species varies throughout the Yukon Area due to species distribution, migration patterns, and run timing. Salmon stocks are generally mixed in the Yukon River unless they segregate by the left and right bank orientation (e.g., Subdistricts 4-B, 4-C, 5-A, and 5-B), or enter tributaries or areas that predominantly have only 1 salmon species present at a time (e.g., Subdistrict 5-D for Chinook and then fall chum salmon). During the survey and on fishing permits, information is also collected on subsistence harvests of nonsalmon species: whitefish (*Coregonus* spp. and *Prosopium cylindraceum*), sheefish (*Stenodus leucichthys*), burbot (*Lota lota*), northern pike (*Esox lucius*), Alaska blackfish (*Dallia pectoralis*), Arctic grayling (*Thymallus arcticus*), longnose sucker (*Catostomus catostomus*), Arctic char (*Salvelinus alpinus*), Arctic lamprey (*Lethenteron camtschatica*), tomcod/saffron cod (*Eleginus gracilis*), Pacific herring (*Clupea pallasii*), and Pacific halibut (*Hippoglossus stenolepis*).

OBJECTIVES

The objectives of the study included the following:

1. Update community household lists to provide the basis for stratified random sampling of fishing and nonfishing households sufficient to support community harvest estimates, and estimate the number of people in each surveyed community.
2. Estimate the number of salmon and nonsalmon fish species harvested for subsistence in the Yukon Area, by community, using household surveys, harvest documented on subsistence and personal use permits, commercial fisheries reports of salmon caught but not sold, and records of salmon given to communities from test fishery projects.
3. Estimate the number of salmon harvested from each fishing community, district, and subdistrict in the Yukon Area.
4. Document gear types used by subsistence and personal use fishermen and the percentage of Chinook salmon harvested by gear types in 2013 in the Yukon Area.
5. Document the number of dogs and salmon fed to dogs within Yukon Area communities.
6. Document household responses relating to meeting of subsistence salmon needs in surveyed communities.
7. Collect additional information on species and time of harvest for small whitefish (cisco and round whitefish species).

In addition, the investigators documented comments and concerns conveyed by subsistence users during household surveys.

A pilot project was conducted in the community of Grayling to test an inseason survey method. Personnel from the postseason survey project were involved to make sure that data collected and summarized inseason could be used to produce postseason harvest estimates. The inseason project was funded by the Chinook Salmon Research Initiative and led by Caroline Brown of Division of Subsistence. Inseason results will be published by ADF&G Division of Subsistence.

METHODS

Total number of salmon harvested for subsistence and personal use fisheries was estimated using information collected from household surveys, subsistence and personal use permits, test fishery data supplied by projects, harvest calendars, and postcards. Total subsistence and personal use harvest includes fish harvested for direct personal or family use, fish distributed to households from various test fishery projects, and fish caught in commercial fisheries but retained for

household use. Test fishery and commercial fishery information was supplied by project leaders and ADF&G management staff. In surveyed communities, information was collected from selected households and expanded to estimate the harvest of the entire community. In permit communities, harvest totals reported on returned permits were summed but not expanded to account for any harvest associated with unreturned permits.

HOUSEHOLD SUBSISTENCE SURVEYS

Participation in the survey was voluntary, and household harvest information was kept confidential. Surveys were conducted in the Coastal District and Lower Yukon Area through Anvik in September and in Kaltag and upriver communities in October. Communities were surveyed roughly in order, from downriver to upriver, after most households finished harvesting salmon for subsistence. To maintain consistency in administration of the survey, household surveys were primarily conducted by the same 2 ADF&G technicians throughout the season.

Survey Design

The household harvest survey methodology was based on a stratified random sample design (Cochran 1977). In this design, a household within the community was the primary sampling unit. A household generally consists of 1 or more people living together in a dwelling and sharing the same phone and mailing address. Multiple generations living in 1 dwelling would be considered 1 household. Individuals living in detached but physically related structures were considered part of a household if they participated as a unit in harvesting, processing, and distributing resources and shared contact information.

The database of Yukon Area households was updated using information from the previous years' surveys. Community census lists, telephone directories, news items, and other sources of information were also used to maintain the database. Households that lived outside of the survey areas but traveled to the Yukon River to fish in or near a surveyed community were included on the household list in the community nearest their fishing location.

Households were stratified into 5 harvest groups based on the level of harvest, which was determined by the total number of salmon harvested by each household in the most recent 2 of the previous 5 years. Total salmon harvest included Chinook, summer chum, fall chum, and coho salmon but did not include pink or sockeye salmon. When 2 recent years of harvest data were unavailable, such as from new households or households that have not participated in the survey, the household's harvest group designation remained the same as the previous year or the household was classified as unknown. The harvest groups and survey coverages (i.e., percentages of households selected for surveys within the group) were as follows:

1. Unknown: Unknown harvest level; survey coverage 100%.
2. Do not fish: Households that do not harvest salmon; survey coverage 30%.
3. Light harvester: Harvest of 1–100 total salmon; survey coverage 30%.
4. Medium harvester: Harvest of 101–500 total salmon; survey coverage 100%.
5. Heavy harvester: Harvest of more than 500 total salmon; survey coverage 100%.

In years when households have been subject to subsistence restrictions in the summer and/or fall seasons, they may have been unable to harvest as many salmon as usual. Therefore, when calculating groups for the next survey year, households may have been moved from the unknown group or from a lower harvest group to a higher harvest group, but would not be downgraded a group based on their most current harvest data. The household database was updated in May with

harvest group changes in order to generate the mailing list for subsistence calendars sent out prior to the fishing season.

To improve the precision of harvest estimates in the communities of Emmonak, Holy Cross, Pilot Station, and Tanana, sampling rates in the light harvester and do not fish groups were increased to 50% of households in those groups. When any harvest group contained 5 or fewer households, all households in that group were included in the survey (i.e., 100% coverage). In communities with less than 40 households, all households were included in the survey (100% coverage).

Fishing households included all households that participated in subsistence salmon fishing activities. Frequently, 2 or more households fished together at a fish camp or as a group where 1 household operated fishing gear, and the other household processed fish (cutting and drying). Each of these households was considered to be a "fishing" household. The number of fish harvested by each household consisted of the number of fish taken home from the group catch. In cases where fishing households distributed fish to nonfishing households that did not participate in the group, the receiving households were not considered to be fishing households.

Survey Questionnaire

To maintain comparability of data between years, the subsistence survey questions have generally remained consistent from year to year (Figure 3). Questions included total number of salmon harvested by the household (Questions 5 and 7), whether the household commercial fished and if any of their subsistence harvest was retained from commercial fishing (Question 9), number of salmon kept by the household (Question 12), fishing gear types used to harvest salmon (Question 8), gear types used to harvest Chinook salmon (Question 8A), and area fished (Question 7). Salmon retained from commercial fishing are included in subsistence harvest totals for each household (Question 7).

To determine the distribution of salmon within a community, the survey addressed the number of households that fished together (Question 6), total number of the group's catch (Question 5), the number of salmon given to families outside the group (Question 11), the number of salmon received from other households, the number of salmon retained from commercial harvest, the number of salmon received from a test fishery project (Question 13), and the number of salmon harvested for dog food (Questions 18, 19, and 20).

Households were asked to assess at what level their subsistence salmon needs were met for each species (Question 14). Needs met was calculated by comparing the number of salmon harvested or received to the number that the household said they usually harvested or received. Households may receive fish from test fishery projects or throughout the year from friends and relatives. At the time of the survey, some households were unable to assess whether their needs were met because they had not yet received their fish for the year. Comments were also recorded by surveyors to identify factors such as lack of fishing equipment or bad weather that affected a household's ability to meet its needs, and to indicate whether a household usually did not harvest a particular species. If a household lost part of its subsistence catch (Question 10), the surveyor asked about the reason for loss and verified that the lost fish were included in the harvest estimates. Lost salmon are included in household harvest estimates but are not included in a household's use (Question 12), unless they were fed to dogs.

Households were also asked about their harvest of pink salmon (Question 7), sockeye salmon (Question 16), and nonsalmon fish species (Question 15). Nonsalmon species include large whitefish over 4 pounds, small whitefish species less than 4 pounds, sheefish, burbot, northern pike, Alaska blackfish, Arctic grayling, longnose sucker, Arctic char, Arctic lamprey, Pacific halibut, Pacific herring, and tomcod/saffron cod. For species that are commonly harvested in the winter and spring, households were asked about their harvest of that species throughout the previous winter, from the date of the previous year's survey to the current year's survey. Arctic lamprey harvested during the winter of 2012 were reported by households during the 2013 survey interviews.

In 2013, minor changes to the survey form were made to Questions 7 and 15 to reflect local fishing districts and other species distribution (e.g., households in the middle and upper Yukon Area were not asked about harvest of tomcod). Households in all the surveyed communities were asked for additional information about whitefish species. 'Large whitefish' was broken out into broad and humpback whitefish (*Coregonus nasus* and *C. pidschian*, respectively). Small whitefish species including Bering cisco, least cisco and round whitefish (*Coregonus laurettae*, *Coregonus sardinella*, *Prosopium cylindraceum*) were still grouped together, but households were asked what time of year they harvested small whitefish species. Households in the Coastal District and District 1 were asked about their harvest of Pacific herring and Pacific halibut.

Survey Implementation

Household surveys were conducted in September and October when the majority of salmon fishing activities had ended but while fishermen could still easily recall their harvest numbers. Surveyors attempted to contact all selected households and noted households that were unavailable during the community visit for follow-up later by phone or letter. The community of Alatna was surveyed by phone and letter due to its small size and difficulties in scheduling boat travel.

Before conducting the survey, surveyors were trained in interviewing techniques, which included learning the local names of salmon species and various approaches to obtain the number of fish harvested. The surveyors were also briefed on current fishery issues and management actions related to the subsistence and commercial salmon fishing season. Surveyors were trained to ask questions consistently and foster a cooperative atmosphere so that interviewed household members were able to recall as accurately as possible their household harvest and use of salmon and share any fishery related knowledge and concerns pertinent to the survey outcome. After the interview was completed, survey participants were given a small token of appreciation (bookmark magnifier) for participating in the survey.

After the household surveys were conducted, survey forms were edited for clarity and completion. When fishermen reported amounts in alternative terms, such as the number of 5 gallon buckets, quart sized bags, gunny sacks, or pounds, a conversion sheet based on local approximate measures was used to estimate number of fish harvested. Calculations were made when the surveys were edited prior to database entry. Households were called back when further clarification was needed or to reconcile information among households that harvested or shared salmon with each other.

Subsistence Assistants (residents with local knowledge) were employed by the Yukon River Drainage Fisheries Association (YRDFA) to assist with reviewing and updating the household list and community maps, and guiding surveyors within the communities. In a few cases,

Subsistence Assistants served as translators, but they did not conduct interviews. When assistants were unavailable, surveyors worked with other sources of local information, such as tribal administrators or school principals to aid in community navigation. In some communities, an additional assistant was hired to work with each surveyor and serve as an alternate if the first assistant was unavailable for the entire visit.

Inseason surveys

In 2013, a pilot project was conducted in the community of Grayling in conjunction with staff from Subsistence Division. All households in Grayling were included in the inseason survey, an increase of 25 households from the number that would have been selected by stratified random sampling.

Households were asked some questions during an initial interview (e.g., number of people in household, number of dogs, harvest of nonsalmon species over the last winter). Weekly surveys were conducted by local residents. ADF&G staff worked closely with the local surveyors by phone and in person during several trips to the community. Each week, from June through August, available households that chose to participate in the surveys were asked how many salmon of each species were harvested or received, what gear types were used, and whether or not households fished in a group or gave salmon away.

Exit interviews were conducted with participants in September. Households were provided totals from their inseason responses and had the opportunity to confirm or correct the information supplied inseason. Households were also asked how many salmon were fed to dogs, and whether their needs were met for salmon. Information from the exit interview was entered into the database in the same manner as information from postseason surveys from other communities. Grayling community harvest estimates were based on responses from households that participated in the inseason surveys, and households were stratified into the same harvest groups used for all communities in the postseason survey.

DATA ANALYSIS AND ESTIMATION METHODS

Denote that:

i = individual household,

j = harvest group (j = 1 … 5)

k = community,

l = harvest location,

m = harvest gear.

Survey responses are denoted by:

y_{ijkl} = the number of salmon (Chinook, chum, coho, and pink) harvested by a sampled household (i) in a harvest group (j) of a community (k), at a location (l);

y_{ijkm} = the number of Chinook salmon harvested by the sampled household (i) in the harvest group (j) of the community (k) with a fishing gear (m);

y_{ijk} = response of a sampled household (i) in the harvest group (j) of the community (k);

n_{jk} = the number of sampled households in the harvest group (j) of the community (k); and

N_{jk} = the total number of households in the harvest group (j) of the community (k).

Community population and total harvest estimates

Simple means and expansions were used to estimate human and dog populations in each community, including the number of people and number of dogs. Harvest totals for the community by species, in subsistence and commercial fisheries, and use of salmon harvested (kept for household use, given away, or fed to dogs) were also estimated with these methods. When the number of surveyed households in a harvest group was greater than or equal to 10 or the proportion of surveyed households was greater than 0.2, mean response of a harvest group of a community ($\bar{y}_{jk}$) was calculated as:

$$\bar{y}_{jk} = \frac{\sum_{i} y_{ijk}}{n_{jk}} \quad . \tag{1}$$

Its standard error (SE_{jk}) was calculated as:

$$SE_{jk} = \sqrt{\frac{s_{jk}^2}{n_{jk}}\left(\frac{N_{jk} - n_{jk}}{N_{jk}}\right)} \text{ where } s_{jk}^2 = \hat{V}(y_{jk}) = \frac{\sum_{j}\left(y_{ijk} - \bar{y}_{jk}\right)^2}{n_{jk} - 1} \quad . \tag{2}$$

Estimate of total response of the community ($\hat{Y}_k$) was calculated as:

$$\hat{Y}_k = \sum_{j=1}^{5} N_{jk}\bar{y}_{jk} \quad ; \tag{3}$$

and its 95% confidence interval (95%CI$_k$) was calculated as:

$$95\%\text{CI}_k = t_{(0.025, df = n_k - 1)} \cdot \sqrt{\hat{V}(Y_k)} \text{ where } \hat{V}(Y_k) = \sum_{j=1}^{5} N_{jk}^2 \left(\frac{N_{jk} - n_{jk}}{N_{jk}}\right)\left(\frac{s_{jk}^2}{n_{jk}}\right) \quad . \tag{4}$$

When the estimation criteria for the equation (1) was not met, response of a harvest group of a community ($\bar{y}_{jk}$) was treated as missing. In this case, harvest of the missing harvest group was assumed to be an average harvest of the rest of the harvest groups.

In this case, the total response of the community ($\hat{Y}_k$) was calculated as:

$$\hat{Y}_k = \frac{N_k}{\sum_{j=1} N_{jk}} \sum_{j=1} N_{jk}\bar{y}_{jk} \quad ; \tag{5}$$

where N_k is the total number of households in a surveyed community.

Its 95% confidence interval (95%CI$_k$) was calculated as:

$$95\%\text{CI}_k = t_{(0.025, df = n_k - 1)} \cdot \sqrt{\hat{V}(Y_k)} \text{ where } \hat{V}(Y_k) = \left(\frac{N_k}{\sum_{j=1} N_{jk}}\right)^2 \sum_{j=1} N_{jk}^2 \left(\frac{N_{jk} - n_{jk}}{N_{jk}}\right)\left(\frac{s_{jk}^2}{n_{jk}}\right) \quad . \tag{6}$$

Because estimates of the responses in each community were independent and mutually exclusive, the estimate of survey wide total ($\hat{Y}$) was calculated as:

$$\hat{Y} = \sum_{k=1}^{5} \hat{Y}_k \,, \tag{7}$$

and its 95% confidence interval (95%CI) was calculated as:

$$95\%\text{CI} = t_{(0.025, df=n-1)} \cdot \sqrt{\hat{V}(Y)} \quad \text{where } \hat{V}(Y) = \sum_{k=1} \hat{V}(Y_k) \,. \tag{8}$$

Salmon harvest by location

Salmon harvests were also estimated by location (district, subdistrict, or tributary where the fish were caught). The proportion of salmon harvested at a fishing location (*l*) by harvest group (*j*) in community (*k*) was estimated as:

$$\hat{p}_{jkl} = \frac{\sum_i y_{ijkl}}{\sum_i \sum_l y_{ijkl}} \,. \tag{9}$$

The number of salmon harvested at a fishing location by all harvest groups in a community was calculated as:

$$\hat{Y}_{kl} = \sum_j N_{jk} \bar{y}_{jk} \hat{p}_{jkl} \,. \tag{10}$$

Finally, the total number of salmon harvested at the fishing location was estimated by summing harvests at that location across communities:

$$\hat{Y}_l = \sum_k \hat{Y}_{kl} \,. \tag{11}$$

Household characteristics: Subsistence fishing, dog ownership, and use of salmon to feed dogs

Within each community, the number of households who a) subsistence fished, b) owned dogs, or c) fed salmon to their dogs was estimated by expanding the proportion of households with those characteristics in each harvest group. Denoting that $n_{kj(s)}$ is the number of sampled households in harvest group (*j*) in the community (*k*) with characteristic (*s*) (i.e. subsistence fished, owned dogs or fed salmon to dogs), the proportion of households with each characteristic ($\hat{p}_{jk(s)}$) was calculated as:

$$\hat{p}_{jk(s)} = \frac{n_{jk(s)}}{n_{jk}} \,. \tag{12}$$

Estimated number of households with each characteristic in the community ($\hat{N}_{k(s)}$) was calculated as:

$$\hat{N}_{k(s)} = \sum_{j=1}^{5} N_{jk}\hat{p}_{jk(s)} \quad . \tag{13}$$

Its 95% confidence interval (95%CI$_k$) was calculated as:

$$95\%\mathrm{CI}_k = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(\hat{N}_{k(s)})} \text{ where } \hat{V}(\hat{N}_{k(s)}) = \sum_{j=1}^{5} N_{jk}^2 \left(\frac{N_{jk}-n_{jk}}{N_{jk}}\right)\left(\frac{\hat{p}_{jk(s)}(1-\hat{p}_{jk(s)})}{n_{jk}-1}\right) \quad . \tag{14}$$

The estimated number of households in the survey wide total ($\hat{T}_{(s)}$) with each characteristic was calculated as:

$$\hat{N}_{(s)} = \sum_{k} \hat{N}_k \quad , \tag{15}$$

and its 95% confidence interval (95%CI) was calculated as:

$$95\%\mathrm{CI} = t_{(0.025,df=n-1)} \cdot \sqrt{\hat{V}(\hat{N}_{(s)})} \text{ where } \hat{V}(\hat{N}_{(s)}) = \sum_{k=1} \hat{V}(\hat{N}_{k(s)}) \quad . \tag{16}$$

Primary gear type usage by community

Information about primary gear types used in subsistence fishing was used to estimate the proportion of households within each community using specific gear types. Denoting that $n_{jkm(s)}$ is the number of sampled households that used a primary fishing gear in a harvest group in a community, the proportion of subsistence fishing households in a harvest group in a community using a gear type (m) was calculated as:

$$\hat{q}_{jkm} = \frac{n_{jkm(s)}}{n_{jk(s)}} \quad . \tag{17}$$

Applying primary gear type proportion ($\hat{q}_{jkm}$) to the proportion of fishing households ($\hat{p}_{jk}$) times the total number of fishing households in the harvest group and community (N_{jk}) and summing across harvest groups, provides an estimated number of households using that gear type. The proportion of fishing households in the community using each primary gear type ($\hat{P}_{km}$) is then obtained by dividing by the sum of all households using all gear types:

$$\hat{P}_{km} = \frac{\sum_{j} N_{jk}\hat{p}_{jk}\hat{q}_{jkm}}{\sum_{m}\sum_{j} N_{jk}\hat{p}_{jk}\hat{q}_{jkm}} \quad . \tag{18}$$

Chinook salmon harvest by gear type

The harvest of Chinook salmon, specifically, was estimated by gear type within each community. The proportion harvested with each gear type was estimated by dividing the sum of Chinook

salmon harvest (y) by individuals (i) within a harvest group (j) and community (k) using gear type (m) by the total Chinook harvest within the harvest group and community:

$$\hat{p}_{jkm} = \frac{\sum_i y_{ijkm}}{\sum_i \sum_m y_{ijkm}}. \quad (19)$$

The variance of this proportion was calculated as:

$$V(\hat{p}_{jkm}) = \frac{\hat{p}_{jkm} \cdot (1 - \hat{p}_{jkm})}{\sum_i \sum_m y_{ijkm} - 1}. \quad (20)$$

Denoting that $\bar{y}_{jk}$ is mean harvest within harvest group and community, the mean number of Chinook salmon harvested by fishing gear (m) in that group was calculated as:

$$\hat{\bar{y}}_{jkm} = \bar{y}_{jk} \hat{p}_{jkm}. \quad (21)$$

Its variance was calculated as:

$$V(\hat{\bar{y}}_{jkm}) = (\bar{y}_{jk})^2 V(\hat{p}_{jkm}) + (\hat{p}_{jkm})^2 V(y_{jk}) - V(\hat{p}_{jkm}) V(y_{jk}). \quad (22)$$

The total number Chinook salmon harvested by each gear type in the community ($\hat{Y}_{km}$) was estimated by multiplying average harvest by total households using that gear type in the harvest group, and summing across all harvest groups in the community:

$$\hat{Y}_{km} = \sum_{j=1}^{5} N_{jk} \hat{\bar{y}}_{jkm}. \quad (23)$$

A 95% confidence interval (95%CI$_k$) for the gear-specific Chinook salmon harvest was estimated as:

$$95\%\text{CI}_k = t_{(0.025, df = n_k - 1)} \cdot \sqrt{\hat{V}(Y_{km})} \text{ where } \hat{V}(Y_{km}) = \sum_{j=1}^{5} N_{jk}^2 \left(\frac{N_{jk} - n_{jk}}{N_{jk}} \right) \left(\frac{V(\hat{\bar{y}}_{jkm})}{n_{jk}} \right). \quad (24)$$

Unexpanded totals

Reported harvests of Alaska blackfish, Arctic char, Arctic grayling, Arctic lamprey, burbot, longnose sucker, Pacific herring and unspecified forage fish, Pacific halibut and unspecified species of flounder, and tomcod/saffron cod were not expanded because of limited harvest information. Harvest groups stratified for salmon were not adequate to estimate species captured with different harvest methods and at different times of year.

PERMIT PROGRAM

In communities along the entire Tanana River drainage (District 6) and where the Yukon River is accessible by the Alaska Highway road system (portions of District 5 and upper Subdistrict 4-A in the Koyukuk River drainage), households must obtain subsistence or personal use fishing permits issued at the ADF&G offices in Fairbanks, Delta Junction, and Tok (Table 1). Permits

were also issued by ADF&G staff stationed at the sonar project near Eagle. Prior to the fishing season, permit applications for the current year were mailed to all fishermen who returned their permits from the previous year. For residents of communities outside the Fairbanks area, subsistence permit applications were mailed with a postage paid return envelope. Included with the permit application were the dates ADF&G staff would visit their community. In 2013, permit issuing trips were conducted in the communities of Central Delta Junction, Dot Lake, Manley Hot Springs, Minto, Nenana, Northway, Tanacross, and Tok (Figure 1).

Permit holders were required to record their daily fish harvest on the permit and return it to ADF&G within 10 days of the expiration date (October 15 for salmon and December 31 for nonsalmon permits and Kantishna River salmon permits). Households that did not report their harvest by the expiration date were mailed up to 2 reminder letters. Official state news releases and newspaper advertisements were published as reminders of permit due dates. Further, households that did not respond to the reminder letters were contacted by telephone.

Harvests from permit communities were calculated by summing harvests of all permit holders who returned their permit, returned a completed reminder letter, or verbally reported their harvest information. Commercially harvested salmon reported as caught, but not sold, on fish tickets and not recorded on subsistence or personal use permits were added to the community where the harvest occurred (Table 1; Appendices B1–B4). Information about dogs and salmon fed to dogs was collected from subsistence permits, but not from personal use permits (Table 2).

Fishermen who obtained permits for the upper portion of Subdistrict 5-D were asked to note on their permits how many salmon were harvested above and below the sonar project near Eagle (Figure 1). This distinction is necessary because harvest above the sonar must be subtracted from the sonar estimate to determine passage of Chinook and fall chum salmon into Canada.

The community of Stevens Village was surveyed as part of the annual household harvest survey; however, some households fished downriver in a permit area (Figure 1). To avoid double counting fish estimated by the harvest survey, information from permits issued to households in Stevens Village was not added to the survey estimates. Permit information was used to supplement data collected as part of the household harvest survey. The number of fishing households does not include households issued permits for the harvest of northern pike in the Tolovana River. Households that were issued and fished permits in more than 1 permit area were also not included in overall fishing household totals (Table 1).

SUBSISTENCE HARVEST CALENDARS AND POSTCARDS

Prior to the salmon fishing season, subsistence harvest calendars were distributed to households in surveyed communities in the Yukon Area. Calendars were also sent to previously identified households that did not live in surveyed communities and fished outside of permit areas. Calendars, in which fishermen record their daily salmon harvest by species, were primarily used to help fishermen remember their harvest numbers and provide information on timing of subsistence harvests by species.

In May 2013, 1,760 calendars (1,101 to Lower Yukon Area and 659 to Upper Yukon Area) were mailed to all households except those in the do not fish category. Calendars were also mailed to households with a history of subsistence fishing in the community of Rampart, and extra calendars were available upon request. Prior to surveyor visits to each community, fliers were sent to post offices, stores, schools, or city offices to remind fishermen to have their harvest

calendars available during the household surveys. Each household that returned a properly completed 2013 harvest calendar before January 1, 2014, became eligible to win one of thirty-one $100 prizes or one $500 lottery prizes.

To collect additional information on the harvest of Arctic lamprey, 677 postcards were mailed to every household in the communities of Anvik, Grayling, Holy Cross, Marshall, Mountain Village, Pilot Station, Pitkas Point, Russian Mission, and St. Marys in November, 2012. Households were asked to record their subsistence and commercial Arctic lamprey harvests from October to December of 2012 (Figure 4), because the fishery usually occurs after salmon fishing has concluded. To avoid double counting Arctic lamprey harvest, postcards were compared to survey interview responses.

RESULTS

OVERALL ESTIMATION OF HARVEST

An estimated total 12,575 Chinook, 115,252 summer chum, 113,767 fall chum, and 14,566 coho salmon were harvested for subsistence and personal use by 1,477 households in the Yukon Area (Table 1). These totals include salmon provided by test fishery projects to households for subsistence use consisting of 901 Chinook, 5,860 summer chum, 3,047 fall chum, and 500 coho salmon (Appendix A5). By species, excluding pink and sockeye salmon, the 2013 total subsistence salmon harvests comprised 5% Chinook, 45% summer chum, 44% fall chum, and 6% coho salmon (Table 1; Figure 5).

By far, most salmon were harvested in subsistence fisheries, when compared to personal use. Of the total harvest, the estimated number of salmon caught in subsistence fisheries, was 255,488 fish (12,533 Chinook, 115,114 summer chum, 113,384 fall chum, and 14,457 coho salmon; Table 1). By contrast, only 672 salmon were harvested in personal use salmon fisheries (42 Chinook, 138 summer chum, 383 fall chum, and 109 coho salmon; Table 1).

Of the total salmon harvest, 39% was fed to dogs. Surveyed and permit households throughout the Yukon Area retained an estimated 99,447 salmon for dog food from subsistence harvests Table 2; Appendix B12) excluding permit harvests from Stevens Village. Surveyed communities and households that obtained subsistence permits owned approximately 5,007 dogs, and approximately 244 households reported feeding subsistence-caught salmon to their dogs (Table 2).

SUBSISTENCE SURVEYS

Prior to the survey season, a total of 1,542 households were selected from the 2,653 households identified within the 33 communities to be surveyed. Included were 30 households that traveled to the Yukon River to fish in or near surveyed communities but were not present in the communities during the fall survey, representing about 1% of the total number of households.

Division of Commercial Fisheries surveyors traveled to 31 Yukon Area communities between September 7 and October 26. During the survey visits, surveyors updated community household lists. Selected and unselected households whose members were identified during the survey visit as moved, combined with another household, or deceased were deleted from the database. New households were added to the database in the unknown harvest group. The database contained a total of 2,793 households after these changes were made. Households in the unknown harvest group (20%) and households in the do not harvest salmon group (30%) made up nearly 50% of

the total number of households in surveyed communities. Estimated percentages of households from known salmon harvesting groups were 34% in the light harvest group, 15% in the medium harvest group, and 1% in the heavy harvest group (Table 3).

In the updated household database, a total of 1,434 selected households remained. Of these, 1,070 households were surveyed in person or by phone; an additional 58 households responded to surveys or returned calendars returned by mail; and 41 households participated through the inseason survey in the community of Grayling. An additional 24 unselected households from 13 communities were surveyed in person or by phone because they were new households, they requested to be surveyed, or they were misidentified as selected. The number of additional surveys from unselected households was small and not statistically significant in regards to the stratified household selection; therefore, their responses were included in the analysis. In total, information was collected from 1,193 households (83% of total number selected). Within the stratified harvest groups, 91% of light, 87% of medium, and 93% of heavy harvest group households were surveyed. Of the unknown harvest group and randomly selected households from the do not harvest group, 67% and 80% were surveyed (Table 3). The lowest success rate occurred in the unknown use group. This is the largest group with 100% survey coverage (554 households). Households in this group may be difficult to contact as they may be new and not established in a community, and may include households that recently moved, households headed by teachers, and households headed by young people.

Based on responses to the survey questions, an estimated 1,308 households participated in the subsistence fishery in 2013 (Table 4). An estimated 30% of unknown households and 20% of households in the does not harvest salmon group harvested salmon. Of the harvester groups, 60%, 80%, and 70% of light, medium, and heavy harvesters, respectively, were estimated to have harvested salmon in 2013 (Table 4). The estimated total population in surveyed communities was 10,524 people and approximately 57% of the population was from light, medium, and heavy harvest group households (Table 5).

Although light harvester households typically harvest less than 100 salmon per year, they make up a large proportion of total number of households and harvested mostly Chinook and summer chum salmon. Heavy harvesters make up a small number of households and harvested a large number of salmon in the fall. The light harvesters group took the largest proportion of the Chinook salmon harvest; an estimated 37% of the total (Appendix A1). Medium harvesters took the largest proportion of summer chum salmon (34%; Appendix A2). Heavy harvesters took the largest proportion of fall chum salmon (50%) and coho salmon (42%; Appendices A3 and A4).

Households do not always fish in the district where they reside and may travel to nearby districts or tributaries. Estimated harvest totals from districts do not always equal the estimated harvest total from communities in that district. Districts from which the greatest numbers of each salmon species were harvested were: District 4 with a harvest of 2,901 Chinook salmon (including harvest from Koyukuk River); District 2 with 30,117 summer chum salmon; District 5 with 54,449 fall chum salmon (including harvest from Chandalar, Porcupine and Black rivers); and District 4 with a harvest of 4,940 coho salmon (including Koyukuk River; Tables 6–9). Most communities harvested salmon from 1 or 2 districts, subdistricts, or tributaries, but households in Fort Yukon, Galena, Koyukuk, Shageluk and Tanana harvested salmon from more than 2 districts or subdistricts to take advantage of harvest opportunities of different salmon stocks (Tables 6–9).

In addition to subsistence fishing, some households were able to receive salmon or supplement their subsistence harvests through other means. Salmon caught in test fisheries made up nearly 9% of the Chinook salmon subsistence harvest in surveyed communities. Summer chum, fall chum, and coho salmon from test fisheries made up between 4% and 5% of subsistence harvest in surveyed communities (Table 1, Appendix A5). At least 5 surveyed communities (Alakanuk, Emmonak Kotlik, Pilot Station, and St. Marys) received salmon from test fishery projects which were added to community harvest estimates (Appendix A5). Households in some portions of the Yukon Area also had the opportunity to retain commercially harvested salmon for subsistence; estimates from surveyed communities included 433 Chinook, 1,699 summer chum, 496 fall chum, and 68 coho salmon reported as retained from commercial catches for subsistence use. A total of 750 summer chum salmon were donated to the community of Galena by Kwik'pak Fisheries LLC (personal communication, Gene Sandone, G. Sandone Consulting, LLC); these fish were donated from commercial harvests and were not added to community totals.

The estimated subsistence harvest of other fish species in Yukon Area surveyed communities included 1,076 pink salmon, 36,333 large whitefish, 28,433 small whitefish, 11,264 northern pike, and 15,553 sheefish (Table 10). The majority of each species was harvested in the Lower Yukon (Coastal District through District 3); however this is also where the majority of surveyed households live (56% of the total number of surveyed households). Households in the Upper Yukon (District 4 and 5) harvested no pink salmon and between 25% and 48% of other fish species. Of whitefish species, broad whitefish totaled 70% of the estimated number of large whitefish and humpback whitefish made up the remaining 30% (Table 10). Of the 1,175 households that provided information about the harvest of non-salmon species, 130 households gave harvest timing information for small whitefish. Households that harvested small whitefish reported the most effort in September and October (Appendix A6).

Nonsalmon species with unexpanded totals included species that are only available in parts of the drainage, such marine based species (halibut, herring, and tomcod). Totals for Pacific halibut and Pacific herring also included the number of 'flounders' and 'smelt' reported by households. Although other species such as Alaska blackfish, burbot, and Arctic grayling are widely distributed, they are not evenly harvested. The harvest of nonsalmon species also included fish harvested in very small numbers such as Arctic char, longnose sucker and sockeye salmon (Table 11).

Information about lamprey harvested between October and December of 2012 was collected during the 2013 surveys and from postcards mailed in 2012. The total lamprey harvest for 2012 was 3,590 Arctic lamprey, harvested primarily in Districts 2–4, between the communities of Marshall and Grayling (Figure 4; Table 11). Survey data indicated a harvest of 2,608 Arctic lamprey by 25 households. Returned postcards indicated a harvest of 1,442 Arctic lamprey harvested by 30 households for subsistence use. Arctic lamprey reported on both surveys and postcards (460 lamprey) by 3 households were subtracted from the total to avoid double counting. Postcards were returned by 106 households (16% of the total number mailed), representing 6 communities that reported subsistence fishing for Arctic lamprey (out of 9 communities that received Arctic lamprey postcards). Postcards from 7 communities (Anvik, Grayling, Holy Cross, Marshall, Pilot Station, Russian Mission, and St. Marys) said that the Arctic lamprey run was later than usual. Several fishermen reported that they were unable to harvest Arctic lamprey due to changes in migration routes, low abundance (Grayling, Mountain

Village, and St. Marys) or poor ice conditions (Mountain Village, Pilot Station, Russian Mission, Shageluk, and St. Marys).

Of the households contacted during the survey, 769 households replied to the "needs met/usually get" question for Chinook salmon. Of these households, 80% met less than half of their Chinook salmon needs and 20% met greater than half of their Chinook salmon needs based on what they usually harvest or receive. In individual communities, responses ranged from 0% (Alatna, Allakaket, Holy Cross, Hughes, Pitkas Point, and Shageluk) to 67% (Hooper Bay) of households meeting at least half of their subsistence needs for Chinook salmon. Most communities had at least 1 household that responded to the needs met question for Chinook salmon; no households from Bettles and Birch Creek answered needs met questions for any species. Of the 510 households providing information on summer chum salmon, 35% of households met less than half of their needs for summer chum salmon and 65% were able to meet greater than half of their needs based on what they usually harvest or receive. Households in 3 communities reported meeting 100% of their needs for summer chum salmon (Fort Yukon, Kaltag, and Stevens Village). Some communities did not have any responses for summer chum salmon (Bettles, Birch Creek, Beaver, and Chalkyitsik). Only 353 and 136 households answered the 'needs met/usually get' question for fall chum and coho salmon respectively. The percentage of households meeting less than half of their subsistence needs was 47% for fall chum salmon and 49% for coho salmon; 53% and 51% of households reported meeting greater than half of their needs for fall chum and coho salmon. Some communities did not have any responses for fall chum salmon (Bettles and Birch Creek), or coho salmon (Alatna, Beaver, Bettles, Birch Creek, Galena, and Stevens Village). Several communities reported meeting 100% of their needs for fall chum salmon (Beaver, Chalkyitsik, Hooper Bay, and Stevens Village). Households in 5 communities reported meeting 100% of their needs for coho salmon (Huslia, Kaltag, Nulato, Pitkas Point and Tanana; Table 12), however in some communities only 1 household provided needs met information. Comments from households reporting they had no need or "usually get zero" included species not traditionally fished in a particular area due to its distribution, personal preference, or individuals in a household allergic to the species.

Primary gear types used by households in surveyed communities to harvest salmon species consisted of set gillnets (45%), drift gillnets (47%), and fish wheels (7%; Table 1). Of the 403 surveyed households that reported harvesting Chinook salmon, 398 reported the gear type they used to harvest Chinook salmon and gave an estimate of how many Chinook salmon were harvested by each gear type. These responses were expanded to obtain estimates of total Chinook salmon harvested by gear type. An estimated 3,382 Chinook salmon (33% of the total) were harvested by drift gillnets, 4,863 (48%) by set gillnets, and 1,963 (19%) by fish wheels in 2013. Less than 1% of Chinook salmon were reported as harvested by other gear types such as dip net, beach seines, or hook and line. Information about harvest of Chinook salmon by gear type has been collected since 2010; set gillnet harvest has ranged between 26% and 48% of harvest, drift gillnet has ranged between 33% and 59%, and fish wheel harvest has ranged between 8% and 19% of Chinook salmon harvest. In 2013, St. Marys, Kaltag, and Nulato harvested 100% of their estimated Chinook salmon catch with drift gillnets. Allakaket, Hughes, Huslia, Nunam Iqua, Shageluk, Stevens Village, and Venetie harvested 100% of their estimated Chinook salmon catch with set gillnets. Fish wheels were used to harvest Chinook salmon in 4 upper river communities: Galena (71% of Chinook salmon harvested in that community), Tanana (22%), Beaver (55%), and Fort Yukon (88%).

SUBSISTENCE PERMITS

In areas that require subsistence fishing permits in upper Subdistrict 4-A (Koyukuk River drainage), District 5 (Yukon River) and District 6 (Tanana River), 348 (95%) of the total subsistence permits issued were returned and 186 households reported participating in salmon and nonsalmon subsistence fisheries (Tables 13 and 14). This includes 10 households that fished permits from 2 areas, 16 households that fished in the Tanana River upstream of Subdistrict 6-C, and 45 permits reporting fishing effort in the pike fishery on the Tolovana River that primarily occurred during the 2013 winter under the ice. The timing and distribution of fishing effort by district and by day based on harvest recorded on permits (Figure 6, bottom panel) showed a slight decrease in fishing effort between summer and fall salmon runs in early August. The majority of the late season fishing effort is concentrated in the Upper Yukon Area districts targeting fall chum salmon. In 2013, the reported fishing effort based on permits in Districts 5 and 6 was the lowest compared to 2008 through 2012.

The 2013 subsistence permit harvest information was based on permits returned by March 20, 2014 (Tables 13 and 14). Total harvests of 1,569 Chinook, 2,809 summer chum, 33,074 fall chum, and 5,340 coho salmon were reported. The total harvest of other fish species included: 2,677 whitefish, 47 sheefish, 67 burbot, 400 northern pike, 229 longnose suckers, and 207 Arctic grayling (Tables 13 and 14).

Additionally, salmon were obtained and utilized from commercial harvests in subsistence permit areas and test fishery projects (Appendix A5). Records from commercial fish tickets under “Not Sold/Personal Use” indicate that 1 Chinook and 96 fall chum salmon were retained from commercial fishing in District 6; these salmon were added to the community harvests from Fairbanks and Nenana (Table 1). Three Chinook salmon were distributed to the community of Eagle from the drift gillnet test fishery project conducted as part of the sonar project, and 110 fall chum and 43 coho salmon were distributed from a sonar feasibility project operated near Manley on the Tanana River (Table 1; Appendix A5).

The total number of salmon fed to dogs represented over 60% of the subsistence harvest of summer chum, fall chum, and coho salmon reported on permits. Based on subsistence salmon permits (not including Tolovana pike permits which do not require the reporting of dog information), 76 households indicated that they fed 24,873 whole salmon to dogs (Table 2).

The 133 households that reported gear types on their permits for subsistence salmon included 100 households (75%) using set gillnets, 33 (25%) households using fish wheels (Table 1). This does not include 45 households that fished in the Tolovana River pike fishery and primarily used jigging gear, 2 households from Stevens Village that were included in the subsistence survey estimates, or 3 households that fished more than 1 permit.

PERSONAL USE

In 2013, 66 (99%) of the personal use permits issued were returned (Table 13). Of these, 36 permits reported fishing, including 29 that were issued for salmon and 7 that were issued for nonsalmon species. This includes 3 household that fished 2 types of personal use permits (salmon and nonsalmon). Personal use permit holders reported harvesting 42 Chinook, 138 summer chum, 383 fall chum, and 132 coho salmon; and 89 whitefish, 1 sheefish, 1 burbot, 3 northern pike, 118 longnose suckers, and 3 Arctic grayling (Tables 13 and 14). Gear types used by households fishing for personal use by gear type included 33 households (92%) using set

gillnets, 1 household using a fish wheel (3%), and 2 households (5%) using other gear (fyke net; Table 1).

CALENDARS

In 2013, households returned 330 subsistence harvest calendars (approximately 19% of total issued). A total of 260 calendars (79% of those returned) documented salmon harvest information. The remaining households that returned harvest calendars in 2013 either indicated they "did not fish" this season (20%) or the calendars were returned blank (1%). The timing and distribution of fishing effort by district and by day is shown based on returned calendars (Figure 6 top panel). The greatest number of households that reported fishing on a single day in a district was 28 households in District 2. Fishing effort reported by more than 1 household per district ranged from 97 days in District 4 to 20 days in the Coastal District. Summer fishing effort was most prominent in the Lower Yukon Area, whereas Districts 4 and 5 reported more consistent fishing effort throughout the summer and fall seasons.

DISCUSSION

Run size and fishery management actions can significantly impact the ability of subsistence fishing households to harvest salmon. In 2013, modifications were made to the regulatory subsistence fishing schedule by emergency orders to protect Chinook salmon. Large districts and subdistricts were further subdivided for management purposes to reduce fishing pressure on Chinook salmon, specifically through management of the Coastal District as 2 sections (Southern and Northern), restriction of some commercial fishing periods in District 1 to the South Mouth only, division of Subdistrict 4-A into lower and upper areas, and division of Subdistrict 5-D into 3 areas (lower, middle, and upper; Estensen et al. 2015). Subsistence fishing closures occurred in several districts that are normally open 7 days a week, including the northern portion of the Coastal District and Subdistrict 5-D (Estensen et al. 2015). Several subsistence and commercial fishing periods in Districts 1 and 2 were held concurrently to allow subsistence fishermen more fishing opportunity to harvest from an abundant summer chum salmon run and to reduce the overall amount of time that fishermen would have to encounter Chinook salmon (JTC 2014). Closures on the first pulse of Chinook salmon were extended to include the second pulse of Chinook salmon based on inseason assessment. Subdistrict 5-D was closed during the first and second pulses of the Chinook salmon run. An additional closure was implemented in the middle and upper portions of Subdistrict 5-D to provide further protection for Canadian-origin Chinook salmon (JTC 2014; Estensen et al. 2015). Fisheries in the Tanana River were managed to meet Chinook salmon escapement goals for the Chena and Salcha rivers (JTC 2014; Estensen et al. 2015). During the fall season subsistence fishing restrictions were relaxed back to each area's regulatory schedules and some areas were opened continuously on earlier than normal dates (Estensen et al. 2015).

To further protect Chinook salmon in 2013, gillnet gear was limited to 6 inch mesh or smaller in much of the drainage to target summer chum salmon and nonsalmon species. Additional gear restrictions in both the subsistence and commercial fisheries included the use selective gear types (e.g., beach seines and dip nets (allowed in Districts 1 and 2) and manned fish wheels in the Upper Yukon Area) which required the live release of Chinook salmon back to the water for portions of the season (Estensen et al. 2015). The Koyukuk and Innoko rivers were not closed, but fishermen were restricted to 6 inch or smaller mesh size during the Chinook salmon run.

The cumulative passage estimate from the sonar project operated near Pilot Station was 117,159 Chinook salmon, which was below the 2008–2012 average of 124,992 fish (JTC 2015). Passage of Chinook salmon across the U.S./Canada border was approximately 30,573 Chinook salmon, falling below the interim management escapement goal range of 42,500–55,000 fish (JTC 2014). Summer chum salmon passage at the mainstem Yukon River sonar project operated near Pilot Station was estimated to be approximately 2.7 million, well above the 2008–2012 median of 1.7 million for the project (JTC 2015). The cumulative passage of fall chum was 716,727 which was above the 2008–2012 average of 537,693 fish, and the mainstem Yukon River sonar passage estimate of 84,795 coho salmon was the second lowest since 1995 and well below the 2008–2012 average of 145,937 coho salmon (JTC 2015).

COMMERCIAL AND SUBSISTENCE FISHING

Most commercial fishery permit holders also utilize subsistence resources and have opportunities to take salmon home from commercial harvests for subsistence use. Commercial harvests of summer chum, fall chum, and coho salmon were each above their 2003–2012 averages (Estensen et al. 2015). The percentages of households that reported meeting subsistence needs for commercially harvested species varied by community and species (Table 12; Appendices B2–B4).

Chinook salmon were not allowed to be sold during summer or fall commercial seasons. For the majority of the summer chum salmon commercial fishery, any Chinook salmon harvested incidentally in dip nets, beach seines, or fish wheels had to be released to the water alive (Estensen et al. 2015). A total of 484 Chinook salmon were incidentally harvested and reported as caught but not sold during later commercial summer chum salmon openings in July and August when fishermen were allowed to retain Chinook salmon for subsistence (Estensen et al. 2015). The number of Chinook salmon estimated from survey responses as retained from commercial fisheries (433 fish) was similar to the number of Chinook salmon reported on fish tickets. However, retention of other species (summer chum, fall chum and coho salmon) was often not reported on fish tickets, but was reported during the surveys (estimated total of 1,699 summer chum, 496 fall chum, and 68 coho salmon). Commercially related harvest information was sometimes difficult to obtain during the survey interview. Surveyors often contacted the household member that processed and put up the fish and this person may have known how many salmon the household harvested. However, this individual may not have been involved in catching the salmon and therefore would not know the exact number of salmon taken from either commercial or subsistence periods.

SALMON SURVEY AND AMOUNTS NECESSARY FOR SUBSISTENCE

The subsistence harvests of Chinook and coho salmon in 2013 were below the amounts necessary for subsistence (ANS) as established by the BOF (ADF&G 2001). The ANS levels outlined in regulation 5 AAC 01.236 are 45,500–66,704 Chinook, 83,500–142,192 summer chum, 89,500–167,900 fall chum, 20,500–51,980 coho salmon (Figures 7–10) and 2,100–9,700 pink salmon (Figure 11). The ANS level for pink salmon was added in 2013. Harvests of summer and fall chum salmon were within their respective ranges. The harvest of pink salmon was below the lower range of its ANS level. Pink salmon are significantly less abundant in odd-numbered years in the Yukon Area and they are not widely targeted for subsistence harvest (Appendix B11). The ANS harvest ranges established by the BOF represent the historical harvest

drainagewide from permits, survey estimates, test fisheries and retained from commercial fisheries by salmon species in Alaska. Personal use harvests are not included in ANS.

Overall, the Yukon Area combined subsistence salmon harvest in 2013 of 255,488 Chinook, summer chum, fall chum, and coho salmon was above average. As a component of the overall subsistence salmon harvest, Chinook salmon declined from nearly a fifth to only 5% of the total number of salmon harvested for subsistence (Figure 5). Over this time period harvests of summer chum salmon and fall chum salmon as a percentage of the subsistence harvest have increased (Figure 5).

The previous 10 years included years with very poor harvests and fishing restrictions, such as the closures during the Chinook salmon run in 2009, 2011 and 2012. The 2013 Chinook salmon subsistence harvest was well below average (Figure 7; Appendix B1). Households may be shifting their reliance to other species and taking advantage of abundant runs of chum salmon. The 2013 summer chum and fall chum salmon subsistence harvests were above average (Figures 8 and 9; Appendices B2 and B3). Coho salmon make up the smallest amount of subsistence harvest and were harvested in below average amounts in 2013 (Figure 10; Appendix B4).

Analysis of responses to the needs met question (Figure 3; Question 14) in this project is hampered by the fairly low number of households that choose to respond and the qualitative nature of the question. Responses ranged from 769 households answering the question for Chinook salmon to 136 answering about coho salmon (Table 12). The percentages of subsistence needs being met were calculated by comparing household responses to harvest, salmon received and needs met questions (Figure 3; Table 12; Appendix B14). Analysis of the needs met question does not incorporate harvest group or fishing information; households that did not fish were included with all other households that answered the needs met question. The percentage of households that reported meeting over 50% of their needs for each species in 2013 was below the 2008–2012 average for Chinook salmon and above average for summer, fall chum and coho salmon (Table 12; Appendix B14). Total fall chum salmon harvest in 2013 was higher than each of the previous 10-years, but just over half of households (54%) said they met greater than half of their needs for this species (Appendices B3 and B14). The subsistence harvests of fall chum salmon in Districts 2 and 3 were 96% and 74% above the 2008–2012 average (Appendix B3), however, only 25% and 60% of households in Districts 2 and 3 respectively reported meeting greater than half of their needs for fall chum salmon (Table 12).

Of the households that responded to the needs met question or provided comments about meeting subsistence needs, 1,127 households offered comments concerning meeting Chinook salmon needs. Of these, 223 mentioned the poor Chinook salmon run and 165 households mentioned closures as the reason they were unable to meet Chinook salmon needs. Expenses and lack of fishing gear such as 6 inch mesh gillnets, dip nets, boats, motors, etc. were mentioned by 64 households as impacting their ability to harvest enough Chinook salmon. Some households (22) reduced or eliminated their harvest of Chinook salmon in conservation efforts. River conditions were mentioned by 29 households, including many from Galena where extensive flooding during breakup damaged fishing gear or caused households to spend time rebuilding during the fishing season. The remaining households did not need Chinook salmon, did not provide a reason for not meeting needs, or gave personal or irrelevant comments (health, travel, no time to fish, no crew to help). The number of households providing a verbal comment was greater than the number of households (769) giving a number of Chinook salmon that they usually get (Appendix B14).

Of the 1,045 households providing comments about summer chum salmon, 734 households either met their needs for summer chum salmon or had no need for that species. Eighty-eight households responded they did not meet their needs due to management actions (47) or gear restrictions (41). Nearly 200 households (199) did not fish for summer chum salmon by choice or due to personal reasons. The remaining households responded they were unable to meet their needs for summer chum salmon due to river conditions, run dynamics or weather. Only 510 households gave a number of summer chum salmon that they usually get (Appendix B14).

Fishermen in the Upper Yukon Area are more limited in their options for salmon harvest; large numbers of summer chum and coho salmon spawn in the Tanana River, but far fewer migrate past communities located in Subdistricts 5-C and 5-D above the confluence of the Yukon and Tanana rivers (Figure 1; Appendices B2 and B4). Coho salmon are found throughout the Tanana River drainage but are less abundant than fall chum salmon that are also present. Coho salmon run timing in the Tanana River also often coincides with the formation of ice on the river in October. Households that commented on not meeting their needs for fall salmon included dissatisfaction with management (18 fall chum and 10 coho salmon comments), expenses and equipment (33 fall chum and 21 coho salmon comments), river conditions (12 fall chum and 4 coho salmon comments) or personal reasons (56 fall chum and 41 coho salmon comments). Many households said they had no need or did not usually harvest fall fish (687 households for fall chum and 909 households for coho salmon). Only 353 and 136 households gave a number of fall chum or coho salmon, respectively, that they usually get (Appendix B14).

NONSALMON SPECIES

Harvest of nonsalmon fish species was probably underestimated by this project. The stratification and harvest estimation system is based on a household's historical salmon harvest and may not adequately represent households that fish predominantly for other species. In order to improve the harvest estimates of nonsalmon species, additional household harvest strata and sampling designs would need to be identified and developed (Borba and Hamner 1998). Asking households to estimate their harvest of nonsalmon species from the previous 12 months increases the possibility of error in the harvest estimates. Methods to estimate community harvests of Arctic lamprey or to account for differences between reported subsistence harvests have not been developed for either the subsistence survey or the lamprey postcards. Information provided from this survey on non-salmon species helps document where harvest of non-salmon species is occurring and their importance to communities of the Yukon Area (Appendix B13). The number of nonsalmon species reported on subsistence and personal use permits in 2013 was less than the 2008–2012 and 2003–2007 averages for all nonsalmon species except longnose suckers (Appendices B5–B10).

DOGS

The estimated amount of all salmon species (summer and fall chum and coho salmon) fed whole to dogs from surveyed communities and permit areas was 27% higher than the 2008–2012 average. Much of the increase was due to the large number of fall chum salmon harvested in 2013 in District 5 surveyed communities, which was 72% higher than the 2008–2012 average (Appendix B12). In 2013 the estimated number of fish fed to dogs in the Yukon Area was greater than the 2008–2012 average by 64% (fall chum salmon), 37% (coho salmon), and 11% (summer chum salmon; Appendix B12). Fluctuation in the amount of salmon fed to dogs is partially due to the availability of salmon and ability to supplement feeding salmon to dogs with nonsalmon

fish species, meat, or commercial dog food. The number of dogs in the Yukon Area (Appendix B12) in 2013 was 4% less than the 2008–2012 average.

SURVEY COMMENTS

During the survey, households had the opportunity to comment on any topic related to fishing they felt was important (Figure 3; Question 21). The most numerous comments from the survey regarded fishing windows or fishing schedules that restricted openings thus resulting in missed opportunity when salmon were running through the local fishing area (238 comments). More fishermen commented that 2013 was a poor year (85) than a good year (56). Other issues that generated comments (45) were lack of 6 inch mesh gillnets, difficulties in changing mesh sizes, or lack of other fishing equipment (e.g., dip nets), and expenses such as fuel, boats, motors, smokehouse, freezers, etc. Weather and river conditions affected 35 households. Some households reduced fishing effort due to concern about the Chinook salmon run size and to practice voluntary conservation measures (28).

Fishermen also commented that a small number of salmon harvested were affected by diseases or parasites, that fishing was adversely affected by weather or river conditions, or that salmon were stolen or damaged by animals. There is usually little wastage of fish taken for subsistence purposes, although poor weather conditions may cause some fish to spoil during processing and some fish are lost to disease (e.g., *Ichthyophonus*) or scavengers. Households may harvest additional salmon to make up for lost fish or be unable to meet subsistence needs if salmon were lost after the fishing season. Generally, the number of salmon lost each year is less than 2% of the total salmon harvest.

The surveyors heard many comments to the effect that fishermen only catch what they need for subsistence and then stop fishing, therefore subsistence fishing restrictions were unnecessary. For some fishermen, the windows schedule prevented them from catching all their fish at once, which impacted processing and storage of fish. Short openings stretched out the season, an important consideration for those who were unable to spend the entire season at fish camps, especially when gasoline costs and work schedules limit the number of possible trips to fish camp. Fishermen commented that by restricting fishing times, the windows schedule reduced the ability of fishermen to adapt to circumstances such as poor weather, water levels, or work schedules; they also expressed concern that it was difficult to know when fishing was open and that greater communication of schedules and management actions might help.

A few households (33) told the surveyors they were pleased with the 2013 season and ADF&G management actions put in place to conserve Chinook salmon. Some households in the Upper Yukon Area pledged to reduce their Chinook salmon harvest, and may have received donated summer chum and Chinook salmon from the Lower Yukon Area to help make up for reduced subsistence harvest. Several communities also harvested significantly fewer Chinook salmon than their 2008–2012 and 2003–2007 averages (Appendix B1), and most communities harvested more summer chum and fall chum salmon than their 2003–2012 averages (Appendices B2–B3).

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TABLES AND FIGURES

Table 1.–Subsistence and personal use salmon harvest estimates, including commercially related and test fishery harvests provided for subsistence use, and related information, Yukon Area, 2013.

Community	Number of fishing households [b]	Number of dogs [c]	Estimated harvest				Primary gear used [a]		
			Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels
Hooper Bay	135	310	1,210	13,629	91	73	124	7	0
Scammon Bay	74	157	332	9,506	58	214	67	0	0
Coastal District total	209	467	1,542	23,135	149	287	191	7	0
Nunam Iqua	18	46	12	2,651	93	83	17	1	0
Alakanuk [d]	63	160	275	7,520	328	167	18	40	0
Emmonak [d]	87	199	553	8,209	2,165	517	11	68	0
Kotlik [d]	83	162	794	10,136	1,087	457	37	46	0
District 1 subtotal	251	567	1,634	28,516	3,673	1,224	83	155	0
Mountain Village	115	145	266	11,861	2,174	271	8	105	0
Pitkas Point	17	26	37	2,186	65	41	2	11	0
St. Marys [d]	105	98	215	9,167	1,009	124	6	99	0
Pilot Station [d]	47	110	258	5,299	777	136	2	45	0
Marshall	52	151	328	3,986	853	508	4	48	0
District 2 subtotal	336	530	1,104	32,499	4,878	1,080	22	308	0
Russian Mission	69	120	236	3,967	804	152	13	56	0
Holy Cross	22	46	204	262	855	0	13	9	0
Shageluk	9	19	4	463	105	219	5	4	0
District 3 subtotal	100	185	444	4,692	1,764	371	31	69	0
Lower Yukon River total	687	1,282	3,182	65,707	10,315	2,675	136	532	0
Anvik	19	57	121	830	763	97	4	14	0
Grayling	33	113	226	618	471	34	10	20	0
Kaltag	23	37	348	67	583	306	0	23	0
Nulato	67	111	602	401	2,995	125	2	65	0
Koyukuk	33	172	898	4,459	5,308	3,267	25	8	0
Galena	27	167	275	179	602	170	12	11	4
Ruby	21	125	357	681	2,505	345	14	0	7
District 4 Yukon River subtotal	223	782	2,827	7,235	13,227	4,344	67	141	11
Huslia	17	149	62	3,241	722	342	17	0	0
Hughes	7	48	6	829	535	18	6	0	1
Allakaket	16	131	6	2,116	687	236	16	0	0
Alatna	5	2	0	340	20	0	5	0	0
Bettles	0	26	0	0	0	0	0	0	0
Koyukuk River subtotal	45	356	74	6,526	1,964	596	44	0	1
District 4 subtotal	268	1,138	2,901	13,761	15,191	4,940	111	141	12

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Table 1.–Page 2 of 3.

Community	Number of fishing households [b]	Number of dogs [c]	Estimated harvest				Primary gear used [a]		
			Chinook	Summer chum	Fall chum	Coho	Set gillnet	Drift gillnet	Fish wheels
Tanana	49	362	1,200	9,565	31,546	1,135	32	0	17
Rampart [e]	2	2	35	5	100	0	2	0	0
Fairbanks NSB [e]	29	130	610	1,350	1,160	0	26	0	3
Stevens Village	6	44	239	50	840	0	6	0	0
Birch Creek	0	0	0	0	0	0	0	0	0
Beaver	7	25	107	12	21	0	5	0	2
Fort Yukon	50	327	1,561	225	16,453	7	7	0	43
Circle [e]	8	75	157	66	1,397	150	4	0	4
Central [e]	2	3	21	0	0	0	1	0	1
Eagle [d, e, f]	19	182	175	50	18,871	0	11	0	8
Other District 5 [e, g]	8	16	125	94	121	0	6	0	2
District 5 Yukon River subtotal	180	1,166	4,230	11,417	70,509	1,292	100	0	80
Venetie	25	193	311	0	5,340	6	25	0	0
Chalkyitsik	7	33	0	0	249	0	7	0	0
Chandalar and Black Rivers subtotal	32	226	311	0	5,589	6	32	0	0
District 5 subtotal	212	1,392	4,541	11,417	76,098	1,298	132	0	80
Manley [e]	8	51	165	45	1,539	447	7	0	1
Minto [e, h]	9	76	60	258	593	266	7	0	2
Nenana [e]	21	161	87	646	3,112	1,762	13	0	8
Healy [e]	1	30	0	0	740	200	1	0	0
Fairbanks NSB [e]	43	304	91	211	6,025	2,685	37	0	5
Other District 6 [e, i]	19	106	6	72	5	6	18	0	0
District 6 Tanana River subtotal	101	728	409	1,232	12,014	5,366	83	0	16
Upper Yukon River total	581	3,258	7,851	26,410	103,303	11,604	326	141	108
Survey community subtotal	1,308	3,871	10,145	106,595	77,167	8,593	520	680	74
Subsistence permit subtotal	133	1,136	1,486	2,659	33,074	5,363	100	0	33
Subsistence test fishery subtotal	–	–	901	5,860	3,047	500	–	–	–
District 6 commercial retained	–	–	1	0	96	1	–	–	–
Subsistence harvests subtotal	1,441	5,007	12,533	115,114	113,384	14,457	620	680	107
Personal Use permit subtotals	36	–	42	138	383	109	33	0	1
Alaska, Yukon River total [j]	1,268	4,540	11,033	92,117	113,618	14,279	462	673	108
Alaska, Yukon Area total	1,477	5,007	12,575	115,252	113,767	14,566	653	680	108
AK, Yukon Area percentages of the total	–	–	5%	45%	44%	6%	45%	47%	7%

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Table 1.–Page 3 of 3.

[a] Totals for gear and household may not be equal due to a small number of fishermen using unknown or other gear types.

[b] Does not include 45 households with Tolovana River pike permits. Includes 4 households that fished both District 5 and District 6 permit areas.

[c] Total number of dogs in each community were estimated by subsistence surveys or reported on returned permits.

[d] Includes salmon distributed from test fishery projects.

[e] Permit data are unexpanded totals from all permits received as of March 20, 2014.

[f] Permit holders harvested 152 Chinook, 50 summer chum, and 12,642 fall chum salmon above the Eagle sonar project.

[g] Other District 5 includes residents of Anchorage, Manley, Minto, Nenana, Tanana, Tok, Wasilla, and Wiseman who obtained a household permit and fished in a Yukon River permit required area.

[h] Includes the harvest of 60 fall chum and 42 coho salmon from Tolovana River pike permits.

[i] Other District 6 includes residents of Tanana and Wasilla and the Upper Tanana River drainage communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok who obtained a permit and fished in the Tanana River.

[j] Total excluding Coastal District is used to assess objectives under the Yukon River Salmon Agreement.

Table 2.–Household and dog information from surveys and permit information by community of residence, Yukon Area, 2013.

Community	Households		Households with dogs		Number of dogs		Households feeding fish		Summer chum salmon		Fall chum salmon		Coho salmon		Total salmon
	Total	*n*	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total	CI 95%	Est total
Hooper Bay	227	96	141	21	310	80	1	1	0	0	28	18	0	0	28
Scammon Bay	114	45	74	17	157	54	1	1	14	8	0	0	0	0	14
Coastal District	341	141	215	38	467	134	2	2	14	8	28	18	0	0	42
Nunam Iqua	38	21	28	5	46	11	1	1	148	138	0	0	0	0	148
Alakanuk	151	58	91	17	160	47	15	10	283	196	0	0	0	0	283
Emmonak	194	97	104	16	199	35	0	0	0	0	0	0	0	0	0
Kotlik	117	50	85	13	162	86	3	5	58	96	0	0	0	0	58
District 1	500	226	308	51	567	179	19	16	489	430	0	0	0	0	489
Mountain Village	166	56	102	27	145	27	0	0	0	0	0	0	0	0	0
Pitkas Point	29	20	8	2	26	4	1	0	50	0	0	0	0	0	50
St. Marys	144	57	51	16	98	34	3	2	36	29	149	143	0	0	185
Pilot Station	125	57	67	11	110	28	0	0	0	0	0	0	0	0	0
Marshall	102	30	72	10	151	29	1	1	140	114	0	0	0	0	140
District 2	566	220	300	66	530	122	5	3	226	143	149	143	0	0	375
Russian Mission	81	28	37	12	120	26	1	0	103	0	0	0	0	0	103
Holy Cross	57	28	34	8	46	14	0	0	0	0	0	0	0	0	0
Shageluk	28	19	11	6	19	12	1	1	0	0	0	0	0	0	0
District 3	166	75	82	26	185	52	2	1	103	0	0	0	0	0	103
Anvik	33	31	23	3	57	7	4	1	283	0	58	0	0	0	341
Grayling	51	40	38	2	113	14	5	2	7	8	16	11	0	0	23
Kaltag	51	15	35	9	37	20	2	2	0	0	0	0	239	294	239
Nulato [a]	86	28	57	12	111	37	1	1	307	281	0	0	115	106	422
Koyukuk	49	12	33	13	172	25	7	10	3,659	0	3,267	0	3,267	0	10,193
Galena	160	59	93	18	167	41	2	3	8	11	0	0	0	0	8
Ruby	71	21	41	15	125	24	10	12	540	269	1,235	0	309	0	2,084
Huslia	93	38	48	15	149	35	13	9	2,699	0	528	0	136	0	3,363
Hughes	34	26	10	3	48	4	3	1	807	92	393	0	0	0	1,200
Allakaket	58	23	33	11	131	42	11	8	2,077	642	243	56	0	0	2,320
Alatna	7	3	2	0	2	–	0	0	0	–	0	–	0	–	0
Bettles	26	14	5	2	26	17	0	0	0	0	0	0	0	0	0
District 4	719	310	418	103	1,138	266	58	49	10,387	1,303	5,740	67	4,066	400	20,193

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Table 2.–Page 2 of 2.

Community	Households Total	Households *n*	Households with dogs Est total	Households with dogs CI 95%	Number of dogs Est total	Number of dogs CI 95%	Households feeding fish Est total	Households feeding fish CI 95%	Summer chum salmon Est total	Summer chum salmon CI 95%	Fall chum salmon Est total	Fall chum salmon CI 95%	Coho salmon Est total	Coho salmon CI 95%	Total salmon Est total
Tanana	100	42	54	10	362	92	18	6	7,467	6,012	29,094	8,607	191	135	36,752
Stevens Village	19	13	10	2	44	6	3	0	50	0	839	0	0	0	889
Birch Creek	16	1	0	0	–	–	0	0	–	–	–	–	–	–	0
Beaver	32	19	9	2	25	4	3	1	0	0	9	10	0	0	9
Fort Yukon	225	56	115	32	327	69	26	21	149	0	9,972	2,360	0	0	10,121
Venetie	80	23	67	12	193	78	28	13	0	0	5,386	5,131	0	0	5,386
Chalkyitsik	29	14	16	10	33	14	4	3	5	7	210	234	0	0	215
District 5	501	168	271	68	984	263	82	44	7,671	6,019	45,510	16,342	191	135	53,372
Survey totals	2,793	1,140	1,594	352	3,871	1,016	168	115	18,890	7,903	51,427	16,570	4,257	535	74,574

Subsistence permits	Permits [b] Issued	Permits [b] Returned	Households with dogs	Number of dogs	Households feeding fish	Summer chum salmon [c]		Fall chum salmon [c]		Coho salmon [c]		Total Salmon
Circle	14	12	11	75	6	–	–	–	–	–	–	800
Eagle	23	22	13	182	11	–	–	–	–	–	–	16,863
District 5 permit subtotal	45	42	29	292	19							17,663
Fairbanks (FNSB) [d]	144	143	47	434	18	–	–	–	–	–	–	4,539
Manley	13	13	11	53	6	–	–	–	–	–	–	531
Nenana	44	42	28	165	19	–	–	–	–	–	–	2,140
District 6 permit subtotal	320	304	151	844	57							7,210
Other communities [e]	127	114	70	227	16							0
Subsistence permit subtotal	365	346	180	1,136	76							24,873
Total survey and permit	–	1,486	1,774	5,007	244	–	–	–	–	–	–	99,447

Note: The number of households contacted (*n*) per species may vary; indicated is the greatest number of households contacted for a given species.

[a] Includes an estimated 307 summer chum salmon that were retained from commercial fishing and fed to dogs.

[b] Permits returned as of March 20, 2014. This does not include permits from Stevens Village or Personal use permits and does include 33 households that were issued permits for more than 1 area and 8 households that fished in 2 different permit areas.

[c] Salmon fed to dogs information was not recorded by species on subsistence permits.

[d] Fairbanks North Star Borough (FNSB) includes residents from the communities of Ester, Fairbanks, North Pole, Salcha, and Two Rivers.

[e] Households from other communities including Central, Dot Lake, Healy, Minto, Northway, Rampart, Tanacross, Tanana, Tok and Wasilla that owned dogs, none of which reported feeding salmon to dogs.

Table 3.–Estimated total number of households identified and contacted in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest Salmon				Light harvester				Medium harvester				Heavy harvester				Community totals			
Community	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*
Hooper Bay	39	21	18	86%	63	17	16	94%	78	23	22	96%	47	47	42	89%	–	–	–	–	227	108	98	91%
Scammon Bay	32	11	10	91%	19	5	3	60%	38	12	10	83%	25	25	24	96%	–	–	–	–	114	53	47	89%
Coastal District	71	32	28	88%	82	22	19	86%	116	35	32	91%	72	72	66	92%	–	–	–	–	341	161	145	90%
Nunam Iqua	5	5	4	80%	6	2	1	50%	12	4	4	100%	15	15	12	80%	–	–	–	–	38	26	21	81%
Alakanuk	29	24	11	46%	37	11	10	91%	52	14	12	86%	33	33	28	85%	–	–	–	–	151	82	61	74%
Emmonak	46	27	14	52%	45	24	23	96%	55	28	23	82%	46	46	42	91%	2	2	2	100%	194	127	104	82%
Kotlik	26	13	12	92%	20	7	7	100%	51	17	18	106%	20	20	20	100%	–	–	–	–	117	57	57	100%
District 1	106	69	41	59%	108	44	41	93%	170	63	57	90%	114	114	102	89%	2	2	2	100%	500	292	243	83%
Mountain Village	33	5	4	80%	31	10	6	60%	65	21	18	86%	37	37	30	81%	–	–	–	–	166	73	58	79%
Pitkas Point	5	2	2	100%	4	4	2	50%	13	13	10	77%	7	7	7	100%	–	–	–	–	29	26	21	81%
St. Marys	38	17	11	65%	19	5	5	100%	51	15	14	93%	35	35	30	86%	1	1	1	100%	144	73	61	84%
Pilot Station	21	8	7	88%	30	14	12	86%	55	28	26	93%	19	19	16	84%	–	–	–	–	125	69	61	88%
Marshall	36	1	1	100%	13	5	5	100%	33	9	9	100%	19	19	17	89%	1	1	0	0%	102	35	32	91%
District 2	133	33	25	76%	97	38	30	79%	217	86	77	90%	117	117	100	85%	2	2	1	50%	566	276	233	84%
Russian Mission	17	4	2	50%	17	6	5	83%	37	12	11	92%	10	10	10	100%	–	–	–	–	81	32	28	88%
Holy Cross	5	1	1	100%	17	9	8	89%	22	12	11	92%	13	13	11	85%	–	–	–	–	57	35	31	89%
Shageluk	10	6	3	50%	8	8	7	88%	7	7	6	86%	1	1	1	100%	2	2	2	100%	28	24	19	79%
District 3	32	11	6	55%	42	23	20	87%	66	31	28	90%	24	24	22	92%	2	2	2	100%	166	91	78	86%
Anvik	4	4	2	50%	6	6	6	100%	14	14	14	100%	8	8	8	100%	1	1	1	100%	33	33	31	94%
Grayling	14	6	13	217%	3	2	1	50%	24	8	19	238%	10	10	8	80%	–	–	–	–	51	26	41	158%
Kaltag	2	2	0	0%	10	4	4	100%	33	10	8	80%	6	6	5	83%	–	–	–	–	51	22	17	77%
Nulato	16	1	1	100%	13	5	4	80%	47	15	16	107%	10	10	8	80%	–	–	–	–	86	31	29	94%
Koyukuk	6	5	0	0%	15	5	4	80%	22	7	4	57%	4	4	2	50%	2	2	2	100%	49	23	12	52%
Galena	24	15	12	80%	58	18	17	94%	67	20	21	105%	9	9	8	89%	2	2	2	100%	160	64	60	94%
Ruby	15	7	5	71%	35	11	7	64%	13	5	3	60%	7	7	6	86%	1	1	1	100%	71	31	22	71%
Huslia	18	15	11	73%	48	14	13	93%	16	5	3	60%	8	8	8	100%	3	3	3	100%	93	45	38	84%
Hughes	5	2	2	100%	16	16	13	81%	10	10	8	80%	2	2	2	100%	1	1	1	100%	34	31	26	84%
Allakaket	11	10	6	60%	33	10	10	100%	9	3	3	100%	3	3	3	100%	2	2	2	100%	58	28	24	86%
Alatna	3	2	1	50%	2	2	1	50%	2	2	1	50%	–	–	–	–	–	–	–	–	7	6	3	50%
Bettles	8	2	1	50%	17	17	13	76%	1	1	0	0%	–	–	–	–	–	–	–	–	26	20	14	70%
District 4	126	71	54	76%	256	110	93	85%	258	100	100	100%	67	67	58	87%	12	12	12	100%	719	360	317	88%

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Table 3.–Page 2 of 2.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Community totals			
Community	*N*	S	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*	*N*	*S*	*n*	*%S*
Tanana	12	2	1	50%	34	15	13	87%	34	17	16	94%	8	8	5	63%	12	12	10	83%	100	54	45	83%
Stevens Village	5	3	2	67%	4	4	3	75%	6	6	4	67%	3	3	3	100%	1	1	1	100%	19	17	13	76%
Birch Creek	2	2	0	0%	11	11	1	9%	3	3	1	33%	–	–	–	–	–	–	–	–	16	16	2	13%
Beaver	6	1	0	0%	9	9	8	89%	15	15	12	80%	2	2	2	100%	–	–	–	–	32	27	22	81%
Fort Yukon	36	12	4	33%	123	36	27	75%	40	12	7	58%	17	17	10	59%	9	9	9	100%	225	86	57	66%
Venetie	14	6	4	67%	48	15	11	73%	13	4	4	100%	4	4	4	100%	1	1	1	100%	80	30	24	80%
Chalkyitsik	11	6	2	33%	16	16	10	63%	2	2	2	100%	–	–	–	–	–	–	–	–	29	24	14	58%
District 5	86	32	13	41%	245	106	73	69%	113	59	46	78%	34	34	24	71%	23	23	21	91%	501	254	177	70%
Survey totals	554	248	167	67%	830	343	276	80%	940	374	340	91%	428	428	372	87%	41	41	38	93%	2,793	1,434	1,193	83%

Note: Total number of households (*N*), the number of households selected (*S*), the number of households contacted (*n*), and the percent of the selected households that were surveyed (*%S*) in each harvest group in surveyed communities. Households contacted may include some households not pre-selected resulting in a household contacted percentage greater than 100%. Dashes indicate indefinable values.

Table 4.–Estimated number of subsistence fishing households in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	total	95%
Hooper Bay	39	17	0.5	0.1	63	16	0.5	0.1	78	21	0.6	0.1	47	42	0.8	0.0	–	–	–	–	227	96	135	21
Scammon Bay	32	10	0.2	0.1	19	3	0.3	0.3	38	10	0.8	0.1	25	24	1.0	0.0	–	–	–	–	114	47	74	14
Coastal District	71	27	0.3	0.1	82	19	0.5	0.1	116	31	0.7	0.1	72	66	0.9	0.0	–	–	–	–	341	143	209	25
Nunam Iqua	5	4	0.0	0.0	6	1	0.0	–	12	4	0.3	0.2	15	12	0.8	0.1	–	–	–	–	38	21	18	6
Alakanuk	29	11	0.5	0.1	37	10	0.2	0.1	52	12	0.3	0.1	33	28	0.8	0.0	–	–	–	–	151	61	63	16
Emmonak	46	14	0.3	0.1	45	23	0.2	0.1	55	23	0.5	0.1	46	41	0.7	0.0	2	2	1.0	0.0	194	103	87	14
Kotlik	26	12	0.7	0.1	20	6	0.3	0.2	51	17	0.8	0.1	20	19	1.0	0.0	–	–	–	–	117	54	83	13
District 1	106	41	0.4	0.1	108	40	0.2	0.1	170	56	0.5	0.1	114	100	0.8	0.0	2	2	1.0	0.0	500	239	251	25
Mountain Village	33	4	0.0	0.0	31	6	0.0	0.0	65	18	0.6	0.1	37	30	0.8	0.0	–	–	–	–	166	58	115	22
Pitkas Point	5	2	1.0	0.0	4	2	0.0	0.0	13	10	0.4	0.1	7	7	1.0	0.0	–	–	–	–	29	21	17	2
St. Marys	38	11	0.5	0.1	19	5	0.0	0.0	51	14	0.7	0.1	35	29	0.9	0.0	1	1	1.0	–	144	60	105	17
Pilot Station	21	7	0.0	0.0	30	12	0.0	0.0	55	26	0.6	0.1	19	16	0.8	0.0	–	–	–	–	125	61	47	8
Marshall	36	1	1.0	–	13	5	0.4	0.2	33	9	0.7	0.1	19	17	0.6	0.0	1	0	–	–	102	32	52	17
District 2	133	25	0.4	0.1	97	30	0.1	0.1	217	77	0.6	0.1	117	99	0.8	0.0	2	1	1.0	–	566	232	336	33
Russian Mission	17	2	1.0	0.0	17	5	0.2	0.2	37	11	0.8	0.1	10	10	1.0	0.0	–	–	–	–	81	28	69	13
Holy Cross	5	1	1.0	–	17	8	0.0	0.0	22	10	0.5	0.1	13	10	0.7	0.1	–	–	–	–	57	29	22	6
Shageluk	10	3	0.3	0.3	8	7	0.0	0.0	7	6	0.7	0.1	1	1	1.0	–	2	2	0.0	0.0	28	19	9	6
District 3	32	6	0.3	0.3	42	20	0.0	0.0	66	27	0.7	0.1	24	21	0.8	0.0	2	2	0.0	0.0	166	76	100	15
Anvik	4	2	0.5	0.4	6	6	0.0	0.0	14	14	0.6	0.0	8	8	1.0	0.0	1	1	0.0	–	33	31	19	3
Grayling	14	13	0.6	0.0	3	1	0.0	–	24	19	0.6	0.1	10	8	0.9	0.1	–	–	–	–	51	41	33	3
Kaltag	2	0	–	–	10	4	0.3	0.2	33	8	0.6	0.2	6	5	0.8	0.1	–	–	–	–	51	17	23	13
Nulato	16	1	1.0	–	13	4	0.5	0.2	47	16	0.8	0.1	10	8	1.0	0.0	–	–	–	–	86	29	67	12
Koyukuk	6	0	–	–	15	4	0.5	0.2	22	4	0.5	0.3	4	2	0.5	0.4	2	2	1.0	0.0	49	12	33	25
Galena	24	12	0.1	0.1	58	17	0.0	0.0	67	21	0.3	0.1	9	8	0.6	0.1	2	2	0.0	0.0	160	60	27	12
Ruby	15	5	0.0	0.0	35	7	0.0	0.0	13	3	0.7	0.3	7	6	0.8	0.1	1	1	1.0	–	71	22	21	3
Huslia	18	11	0.1	0.1	48	13	0.1	0.1	16	3	0.3	0.3	8	8	0.8	0.0	3	3	1.0	0.0	93	38	17	8
Hughes	5	2	0.0	0.0	16	13	0.2	0.0	10	8	0.3	0.1	2	2	0.5	0.0	1	1	1.0	–	34	26	7	2
Allakaket	11	6	0.3	0.1	33	10	0.1	0.1	9	3	0.7	0.3	3	3	0.3	0.0	2	2	1.0	0.0	58	24	16	8
Alatna	3	1	1.0	–	2	1	0.0	–	2	1	1.0	–	–	–	–	–	–	–	–	–	7	3	5	–
Bettles	8	1	0.0	–	17	13	0.0	0.0	1	0	–	–	–	–	–	–	–	–	–	–	26	14	0	0
District 4	126	54	0.2	0.0	256	93	0.1	0.0	258	100	0.5	0.0	67	58	0.8	0.0	12	12	0.8	0.0	719	317	268	33

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Table 4.–Page 2 of 2.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total			
Community	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	PF	SE	*N*	*n*	Est. total	CI 95%
Tanana	12	1	0.0	–	34	13	0.2	0.1	34	16	0.5	0.1	8	5	1.0	0.0	12	9	0.9	0.1	100	44	49	11
Stevens Village	5	2	0.0	0.0	4	3	0.0	0.0	6	4	0.3	0.1	3	3	1.0	0.0	1	1	1.0	–	19	13	6	2
Birch Creek	2	0	–	–	11	1	1.0	–	3	1	0.0	–	–	–	–	–	–	–	–	–	16	2	0	–
Beaver	6	0	–	–	9	8	0.0	0.0	15	11	0.3	0.1	2	1	1.0	–	–	–	–	–	32	20	7	3
Fort Yukon	36	4	0.3	0.2	123	27	0.1	0.1	40	7	0.4	0.2	17	9	0.8	0.1	9	9	0.7	0.0	225	56	50	21
Venetie	14	4	0.3	0.2	48	11	0.3	0.1	13	4	0.3	0.2	4	4	1.0	0.0	1	1	0.0	–	80	24	25	16
Chalkyitsik	11	2	0.0	0.0	16	10	0.2	0.1	2	2	0.5	0.0	–	–	–	–	–	–	–	–	29	14	7	5
District 5	86	13	0.0	0.0	245	73	0.2	0.0	113	45	0.4	0.1	34	22	0.9	0.1	23	20	0.8	0.0	501	173	144	28
Survey totals	554	166	0.3	0.0	830	275	0.2	0.0	940	336	0.6	0.0	428	366	0.8	0.0	41	37	0.7	0.0	2,793	1,180	1,308	67

Note: The number of fishing households was estimated from the total number of households (*N*), the number of households contacted (*n*), the proportion of households that fished (PF), and the standard error (SE) of proportion that fished for each harvest group in each community. Estimated total number of fishing households includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Table 5.–Estimated number of people in households in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	39	16	4.3	0.5	63	16	4.8	0.5	78	21	4.7	0.5	47	42	5.7	0.2	–	–	–	–	227	95	1,104	109
Scammon Bay	32	9	3.7	0.6	19	3	4.7	1.7	38	10	5.3	0.8	25	24	6.4	0.1	–	–	–	–	114	46	653	111
Coastal District	71	25	4.3	0.5	82	19	4.8	0.5	116	31	4.9	0.4	72	66	5.9	0.1	–	–	–	–	341	141	1,757	154
Nunam Iqua	5	4	3.5	0.5	6	1	3.0	–	12	4	6.5	1.5	15	12	4.9	0.3	–	–	–	–	38	21	201	46
Alakanuk	29	11	5.4	0.5	37	10	3.2	0.6	52	12	4.5	0.6	33	27	5.0	0.2	–	–	–	–	151	60	674	82
Emmonak	46	14	3.6	0.5	45	22	3.0	0.3	55	21	5.7	0.5	46	39	4.7	0.1	2	2	4.0	0.0	194	98	845	77
Kotlik	26	9	5.2	0.7	20	5	5.8	0.9	51	15	5.0	0.5	20	18	4.6	0.2	–	–	–	–	117	47	583	76
District 1	106	38	4.5	0.3	108	38	3.1	0.3	170	52	5.2	0.3	114	96	4.8	0.1	2	2	4.0	0.0	500	226	2,303	141
Mountain Village	33	4	5.8	1.2	31	6	2.5	0.5	65	18	4.3	0.5	37	27	5.6	0.3	–	–	–	–	166	55	793	102
Pitkas Point	5	2	8.0	0.8	4	2	4.5	2.5	13	10	4.2	0.4	7	7	5.7	0.0	–	–	–	–	29	21	153	24
St. Marys	38	10	3.9	0.7	19	5	2.2	0.4	51	13	3.3	0.5	35	28	3.8	0.2	1	1	5.0	–	144	57	522	87
Pilot Station	21	7	2.4	0.5	30	12	4.8	0.8	55	26	6.2	0.4	19	16	5.6	0.3	–	–	–	–	125	61	646	71
Marshall	36	1	2.0	–	13	5	3.8	1.1	33	8	3.8	0.6	19	17	4.3	0.2	1	0	–	–	102	31	418	93
District 2	133	24	3.7	0.4	97	30	4.5	0.6	217	75	4.6	0.3	117	95	4.8	0.1	2	1	5.0	–	566	225	2,532	175
Russian Mission	17	2	6.5	1.4	17	5	3.6	0.7	37	11	5.2	0.7	10	10	5.1	0.0	–	–	–	–	81	28	418	86
Holy Cross	5	1	1.0	–	17	8	2.1	0.3	22	10	3.5	0.5	13	10	3.5	0.3	–	–	–	–	57	29	174	30
Shageluk	10	3	3.3	1.0	8	7	1.6	0.1	7	6	3.0	0.3	1	1	2.0	–	2	2	2.0	0.0	28	19	73	21
District 3	32	6	3.3	1.0	42	20	1.9	0.2	66	27	4.4	0.4	24	21	4.1	0.2	2	2	2.0	0.0	166	76	665	91
Anvik	4	2	1.0	0.0	6	6	2.2	0.0	14	14	2.9	0.0	8	8	3.3	0.0	1	1	2.0	–	33	31	85	0
Grayling	14	13	2.7	0.1	3	1	1.0	–	24	17	3.8	0.2	10	8	3.8	0.3	–	–	–	–	51	39	169	14
Kaltag	2	0	–	–	10	4	1.5	0.2	33	8	3.8	0.4	6	4	4.0	0.6	–	–	–	–	51	16	124	29
Nulato	16	1	1.0	–	13	4	4.0	0.6	47	13	3.2	0.5	10	8	2.0	0.1	–	–	–	–	86	26	275	57
Koyukuk	6	0	–	–	15	4	3.0	0.8	22	4	3.5	0.8	4	2	2.0	0.0	2	2	4.0	0.0	49	12	131	0
Galena	24	12	2.7	0.3	58	15	2.3	0.2	67	21	3.2	0.3	9	8	2.9	0.2	2	1	1.0	–	160	57	444	53
Ruby	15	5	2.2	0.5	35	6	2.0	0.6	13	2	6.5	1.4	7	6	1.8	0.2	1	1	2.0	–	71	20	148	46
Huslia	18	11	3.3	0.3	48	13	3.6	0.5	16	3	2.7	0.6	8	8	5.1	0.0	3	3	3.3	0.0	93	38	342	58
Hughes	5	2	1.5	0.4	16	13	2.8	0.2	10	8	2.6	0.2	2	2	3.5	0.0	1	1	3.0	–	34	26	88	8
Allakaket	11	6	2.5	0.6	33	10	2.4	0.5	9	3	3.0	1.2	3	3	1.7	0.0	2	2	3.0	0.0	58	24	145	46
Alatna	3	1	7.0	–	2	1	3.0	–	2	1	1.0	–	–	–	–	–	–	–	–	–	7	3	29	–
Bettles	8	1	1.0	–	17	13	1.5	0.1	1	0	–	–	–	–	–	–	–	–	–	–	26	14	38	6
District 4	126	54	2.7	0.1	256	90	2.7	0.2	258	94	3.2	0.2	67	57	3.1	0.1	12	11	2.8	0.0	719	306	2,018	117

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Table 5.–Page 2 of 2.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	1	4.0	–	34	13	2.4	0.3	34	16	3.1	0.3	8	5	2.4	0.5	12	9	2.3	0.3	100	44	264	37
Stevens Village	5	2	2.0	0.8	4	3	2.0	0.5	6	4	3.0	0.5	3	3	4.0	0.0	1	1	3.0	–	19	13	51	11
Birch Creek	2	0	–	–	11	1	3.0	–	3	1	1.0	–	–	–	–	–	–	–	–	–	16	2	16	–
Beaver	6	0	–	–	9	8	1.4	0.1	15	11	2.1	0.2	2	1	4.0	–	–	–	–	–	32	20	64	9
Fort Yukon	36	3	1.7	0.6	123	27	2.4	0.3	40	7	2.3	0.6	17	9	3.2	0.6	9	9	3.0	0.0	225	55	571	110
Venetie	14	4	4.0	0.9	48	11	2.3	0.6	13	4	2.5	0.7	4	4	4.0	0.0	1	1	4.0	–	80	24	196	71
Chalkyitsik	11	2	4.5	1.4	16	10	3.0	0.3	2	2	3.0	0.0	–	–	–	–	–	–	–	–	29	14	87	17
District 5	86	12	2.0	0.8	245	73	2.4	0.2	113	45	2.7	0.2	34	22	3.2	0.3	23	20	2.7	0.1	501	172	1,249	135
Survey Totals	554	159	3.7	0.2	830	270	2.9	0.1	940	324	4.3	0.1	428	357	4.6	0.1	41	36	2.8	0.1	2,793	1,146	10,524	336

Note: The number of people in surveyed communities was estimated from the total number of households (*N*), the number of households contacted (*n*), average number of people in households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Table 6.–Estimated subsistence harvest including commercially related (not including test fish) of Chinook salmon by fishing location in surveyed communities, Yukon Area, 2013.

	Coastal	Districts			Subdistricts [a]								River drainages					Total by
Community	District	1	2	3	4A	4B	4C	5A	5B	5C	5D down	5D up	Innoko	Koyukuk	Chandalar	Porcupine	Black	community [b]
Hooper Bay	1,210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,210
Scammon Bay	116	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	332
Coastal District	1,326	216	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,542
Nunam Iqua	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
Alakanuk	0	133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	133
Emmonak	0	224	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	224
Kotlik		476	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	479
District 1	0	845	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	848
Mountain Village	0	64	202	0	0	0	0	0	0	0	0	0	0	0	0	0	0	266
Pitkas Point	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37
St. Marys	0	0	204	0	0	0	0	0	0	0	0	0	0	0	0	0	0	204
Pilot Station	0	0	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	157
Marshall	0	0	328	0	0	0	0	0	0	0	0	0	0	0	0	0	0	328
District 2	0	64	928	0	0	0	0	0	0	0	0	0	0	0	0	0	0	992
Russian Mission	0	0	0	236	0	0	0	0	0	0	0	0	0	0	0	0	0	236
Holy Cross	0	0	0	204	0	0	0	0	0	0	0	0	0	0	0	0	0	204
Shageluk	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4
District 3	0	0	0	440	0	0	0	0	0	0	0	0	4	0	0	0	0	444
Anvik	0	0	0	0	121	0	0	0	0	0	0	0	0	0	0	0	0	121
Grayling	0	0	0	0	226	0	0	0	0	0	0	0	0	0	0	0	0	226
Kaltag	0	0	0	0	348	0	0	0	0	0	0	0	0	0	0	0	0	348
Nulato	0	0	0	0	602	0	0	0	0	0	0	0	0	0	0	0	0	602
Koyukuk	0	0	0	0	751	147	0	0	0	0	0	0	0	0	0	0	0	898
Galena	0	0	0	0	145	15	0	0	0	0	0	0	0	115	0	0	0	275
Ruby	0	0	0	0	0	0	357	0	0	0	0	0	0	0	0	0	0	357
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	62	0	0	0	62
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	2,193	162	357	0	0	0	0	0	0	189	0	0	0	2,901

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Table 6.–Page 2 of 2.

Community	Coastal District	Districts 1	2	3	Subdistricts [a] 4A	4B	4C	5A	5B	5C	5D down	5D up	River drainages Innoko	Koyukuk	Chandalar	Porcupine	Black	Total by community [b]
Tanana	0	0	0	0	0	0	0	66	934	200	0	0	0	0	0	0	0	1,200
Stevens Village	0	0	0	0	0	0	0	0	0	0	239	0	0	0	0	0	0	239
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	107	0	0	0	0	0	0	107
Fort Yukon	0	0	0	0	0	0	0	0	0	0	1,403	157	0	0	0	1	0	1,561
Venetie	0	0	0	0	0	0	0	0	0	0	68	0	0	0	243	0	0	311
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	66	934	200	1,817	157	0	0	243	1	0	3,418
Survey totals	1,326	1,125	931	440	2,193	162	357	66	934	200	1,817	157	4	189	243	1	0	10,145

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5D near Fort Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to rounding.

Table 7.–Estimated subsistence harvest including commercially related (not including test fish) of summer chum salmon by fishing location in surveyed communities, Yukon Area, 2013.

	Coastal	Districts			Subdistricts [a]								River drainages					Total by
Community	District	1	2	3	4A	4B	4C	5A	5B	5C	5D down	5D up	Innoko	Koyukuk	Chandalar	Porcupine	Black	community [b]
Hooper Bay	13,149	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13,629
Scammon Bay	6,747	2,759	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9,506
Coastal District	19,896	3,239	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23,135
Nunam Iqua	0	2,651	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,651
Alakanuk	0	6,733	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6,733
Emmonak	0	5,785	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,810
Kotlik	0	8,639	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8,822
District 1	0	23,808	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24,016
Mountain Village	0	1,201	10,660	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11,861
Pitkas Point	0	373	1,813	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,186
St. Marys	0	272	8,878	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9,150
Pilot Station	0	0	3,956	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,956
Marshall	0	0	3,986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,986
District 2	0	1,846	29,293	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31,139
Russian Mission	0	0	616	3,351	0	0	0	0	0	0	0	0	0	0	0	0	0	3,967
Holy Cross	0	0	0	262	0	0	0	0	0	0	0	0	0	0	0	0	0	262
Shageluk	0	0	0	250	35	0	0	0	0	0	0	0	178	0	0	0	0	463
District 3	0	0	616	3,863	35	0	0	0	0	0	0	0	178	0	0	0	0	4,692
Anvik	0	0	0	0	830	0	0	0	0	0	0	0	0	0	0	0	0	830
Grayling	0	0	0	0	618	0	0	0	0	0	0	0	0	0	0	0	0	618
Kaltag	0	0	0	0	67	0	0	0	0	0	0	0	0	0	0	0	0	67
Nulato	0	0	0	0	401	0	0	0	0	0	0	0	0	0	0	0	0	401
Koyukuk	0	0	0	0	3,812	600	0	0	0	0	0	0	0	47	0	0	0	4,459
Galena	0	0	0	0	127	52	0	0	0	0	0	0	0	0	0	0	0	179
Ruby	0	0	0	0	0	0	681	0	0	0	0	0	0	0	0	0	0	681
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	3,241	0	0	0	3,241
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	829	0	0	0	829
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	2,116	0	0	0	2,116
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	340	0	0	0	340
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	5,855	652	681	0	0	0	0	0	0	6,573	0	0	0	13,761

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Table 7.–Page 2 of 2.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D down	5D up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Tanana	0	0	0	0	0	0	0	60	9,505	0	0	0	0	0	0	0	0	9,565
Stevens Village	0	0	0	0	0	0	0	0	0	0	50	0	0	0	0	0	0	50
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12
Fort Yukon	0	0	0	0	0	0	0	0	0	0	76	0	0	0	0	149	0	225
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	60	9,505	0	138	0	0	0	0	149	0	9,852
Survey Totals	19,896	28,893	30,117	3,863	5,890	652	681	60	9,505	0	138	0	178	6,573	0	149	0	106,595

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5D near Fort Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to rounding.

Table 8.–Estimated subsistence harvest including commercially related (not including test fish) of fall chum salmon by fishing location in surveyed communities, Yukon Area, 2013.

	Coastal	Districts			Subdistricts [a]								River drainages					Total by
Community	District	1	2	3	4A	4B	4C	5A	5B	5C	5D down	5D up	Innoko	Koyukuk	Chandalar	Porcupine	Black	community [b]
Hooper Bay	91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	91
Scammon Bay	44	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58
Coastal District	135	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149
Nunam Iqua	0	93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	93
Alakanuk	0	310	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	310
Emmonak	0	291	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
Kotlik	0	692	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	710
District 1	0	1,386	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,404
Mountain Village	0	360	1,814	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,174
Pitkas Point	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
St. Marys	0	58	866	0	0	0	0	0	0	0	0	0	0	0	0	0	0	924
Pilot Station	0	0	194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	194
Marshall	0	0	853	0	0	0	0	0	0	0	0	0	0	0	0	0	0	853
District 2	0	418	3,792	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,210
Russian Mission	0	0	0	804	0	0	0	0	0	0	0	0	0	0	0	0	0	804
Holy Cross	0	0	0	855	0	0	0	0	0	0	0	0	0	0	0	0	0	855
Shageluk	0	0	0	36	0	0	0	0	0	0	0	0	69	0	0	0	0	105
District 3	0	0	0	1,695	0	0	0	0	0	0	0	0	69	0	0	0	0	1,764
Anvik	0	0	0	0	763	0	0	0	0	0	0	0	0	0	0	0	0	763
Grayling	0	0	0	0	471	0	0	0	0	0	0	0	0	0	0	0	0	471
Kaltag	0	0	0	0	583	0	0	0	0	0	0	0	0	0	0	0	0	583
Nulato	0	0	0	0	2,995	0	0	0	0	0	0	0	0	0	0	0	0	2,995
Koyukuk	0	0	0	0	3,107	2,201	0	0	0	0	0	0	0	0	0	0	0	5,308
Galena	0	0	0	0	29	533	40	0	0	0	0	0	0	0	0	0	0	602
Ruby	0	0	0	0	0		2,505	0	0	0	0	0	0	0	0	0	0	2,505
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	722	0	0	0	722
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	535	0	0	0	535
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	687	0	0	0	687
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	7,948	2,734	2,545	0	0	0	0	0	0	1,964	0	0	0	15,191

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Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D down	5D up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Tanana	0	0	0	0	0	0	0	1,002	30,439	105	0	0	0	0	0	0	0	31,546
Stevens Village	0	0	0	0	0	0	0	0	0	0	840	0	0	0	0	0	0	840
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	21	0	0	0	0	0	0	21
Fort Yukon	0	0	0	0	0	0	0	0	0	0	15,213	726	0	0	0	514	0	16,453
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,340	0	0	5,340
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	249	249
District 5	0	0	0	0	0	0	0	1,002	30,439	105	16,074	726	0	0	5,340	514	249	54,449
Survey totals	135	1,818	3,810	1,695	7,948	2,734	2,545	1,002	30,439	105	16,074	726	69	1,964	5,340	514	249	77,167

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5D near Fort Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to rounding.

Table 9.–Estimated subsistence harvest including commercially related (not including test fish) of coho salmon by fishing location in surveyed communities, Yukon Area, 2013.

Community	Coastal District	Districts			Subdistricts [a]								River drainages					Total by community [b]
		1	2	3	4A	4B	4C	5A	5B	5C	5D down	5D up	Innoko	Koyukuk	Chandalar	Porcupine	Black	
Hooper Bay	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
Scammon Bay	205	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	214
Coastal District	278	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287
Nunam Iqua	0	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83
Alakanuk	0	154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	154
Emmonak	0	230	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230
Kotlik	0	408	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	424
District 1	0	875	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	891
Mountain Village	0	14	257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271
Pitkas Point	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
St. Marys	0	28	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114
Pilot Station	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Marshall	0	0	508	0	0	0	0	0	0	0	0	0	0	0	0	0	0	508
District 2	0	42	914	0	0	0	0	0	0	0	0	0	0	0	0	0	0	956
Russian Mission	0	0	0	152	0	0	0	0	0	0	0	0	0	0	0	0	0	152
Holy Cross	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Shageluk	0	0	0	216	0	0	0	0	0	0	0	0	3	0	0	0	0	219
District 3	0	0	0	368	0	0	0	0	0	0	0	0	3	0	0	0	0	371
Anvik	0	0	0	0	97	0	0	0	0	0	0	0	0	0	0	0	0	97
Grayling	0	0	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	34
Kaltag	0	0	0	0	306	0	0	0	0	0	0	0	0	0	0	0	0	306
Nulato	0	0	0	0	125	0	0	0	0	0	0	0	0	0	0	0	0	125
Koyukuk	0	0	0	0	3,267	0	0	0	0	0	0	0	0	0	0	0	0	3,267
Galena	0	0	0	0	1	58	111	0	0	0	0	0	0	0	0	0	0	170
Ruby	0	0	0	0	0	0	345	0	0	0	0	0	0	0	0	0	0	345
Huslia	0	0	0	0	0	0	0	0	0	0	0	0	0	342	0	0	0	342
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	236	0	0	0	236
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	0	0	0	0	3,830	58	456	0	0	0	0	0	0	596	0	0	0	4,940

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Table 9.–Page 2 of 2.

Community	Coastal District	Districts 1	2	3	Subdistricts [a] 4A	4B	4C	5A	5B	5C	5D down	5D up	River drainages Innoko	Koyukuk	Chandalar	Porcupine	Black	Total by community [b]
Tanana	0	0	0	0	0	0	0	12	1,123	0	0	0	0	0	0	0	0	1,135
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	0	0	12	1,123	0	7	0	0	0	6	0	0	1,148
Survey totals	278	926	930	368	3,830	58	456	12	1,123	0	7	0	3	596	6	0	0	8,593

Note: Commercially related fish are salmon harvested during commercial fishing that were not sold, but retained and used for subsistence purposes.

[a] Harvest in Subdistrict 5D near Fort Yukon is divided according to whether harvest occurred downriver (5D-down) or upriver (5D-up) of the confluence of the Porcupine River with the Yukon River.

[b] Totals may not add in both directions due to rounding.

Table 10.–Estimated subsistence harvest of pink salmon, whitefish, pike, and sheefish by surveyed communities, Yukon Area, 2013.

			Estimated subsistence harvest										Total	
			Pink salmon		Large whitefish [a]		Small whitefish [a]		Northern pike		Sheefish		est.	Percent
	Total	Households	Est.	CI	Est.	CI	Est.	CI	Est.	CI	Est.	CI	fish	broad
Community	households	contacted [b]	total	95%	total	95%	total	95%	total	95%	total	95%	harvest	whitefish [c]
Hooper Bay	227	96	302	137	2,738	1,105	4,564	2,037	251	103	11	10	7,866	7%
Scammon Bay	114	47	507	282	817	629	2,628	1,152	1,577	716	116	119	5,645	52%
Coastal District	341	143	809	309	3,555	1,262	7,192	2,323	1,828	711	127	118	13,511	18%
Nunam Iqua	38	21	0	0	239	92	613	261	24	15	906	209	1,782	39%
Alakanuk	151	61	92	145	1,556	1,001	5,719	3,761	754	470	1,471	519	9,592	62%
Emmonak	194	103	0	0	2,370	1,128	3,888	1,398	1,074	406	2,764	1,104	10,096	89%
Kotlik	117	54	23	14	843	840	3,143	1,304	568	339	1,957	871	6,534	100%
District 1	500	239	115	144	5,008	1,707	13,363	4,164	2,420	699	7,098	1,494	28,004	80%
Mountain Village	166	58	0	0	2,194	545	312	176	870	366	850	262	4,226	91%
Pitkas Point	29	21	2	0	412	55	13	20	74	9	83	13	584	96%
St. Marys	144	60	0	0	2,446	946	392	225	606	210	517	161	3,961	76%
Pilot Station	125	61	131	190	1,926	828	59	32	332	158	443	231	2,891	86%
Marshall	102	32	7	5	1,078	365	4	3	458	138	322	101	1,869	59%
District 2	566	232	140	188	8,056	1,395	780	283	2,340	463	2,215	391	13,531	81%
Russian Mission	81	28	12	20	1,554	971	21	0	1,260	721	510	539	3,357	93%
Holy Cross	57	28	0	0	206	102	0	0	23	23	3	3	232	100%
Shageluk	28	19	0	0	375	152	0	0	80	50	97	117	552	100%
District 3	166	75	12	19	2,135	960	21	0	1,363	703	610	536	4,141	95%
Anvik	33	31	0	0	330	43	17	0	100	48	56	12	503	98%
Grayling	51	40	0	0	397	93	34	23	64	45	151	36	646	65%
Kaltag	51	15	0	0	478	513	0	0	53	57	148	118	679	100%
Nulato	86	29	0	0	636	258	0	0	46	30	288	149	970	56%
Koyukuk	49	12	0	0	1,960	0	0	0	245	0	245	0	2,450	100%
Galena	160	60	0	0	576	396	0	0	91	69	72	60	739	90%
Ruby	71	22	0	0	942	254	617	0	58	45	78	56	1,695	67%
Huslia	93	38	0	0	717	64	115	77	1,404	240	95	0	2,331	96%
Hughes	34	26	0	0	1,531	52	1,450	114	151	1	163	79	3,295	20%
Allakaket	58	24	0	0	345	81	255	430	213	50	329	30	1,142	100%
Alatna	7	3	0	0	20	–	0	–	0	–	18	–	38	100%
Bettles	26	14	0	0	0	0	0	0	0	0	0	0	0	–
District 4	719	314	0	0	7,932	720	2,488	431	2,425	266	1,643	216	14,488	74%

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			Estimated subsistence harvest										Total	
			Pink salmon		Large whitefish [a]		Small whitefish [a]		Northern pike		Sheefish		est.	Percent
	Total	Households	Est.	CI	Est.	CI	Est.	CI	Est.	CI	Est.	CI	fish	broad
Community	households	contacted [b]	total	95%	total	95%	total	95%	total	95%	total	95%	harvest	whitefish [c]
Tanana	100	43	0	0	8,906	4,456	4,090	1,500	496	323	3,254	1,902	16,746	69%
Stevens Village	19	13	0	0	40	0	30	0	4	0	5	0	79	100%
Birch Creek	16	2	0	0	–	–	–	–	–	–	–	–	0	–
Beaver	32	20	0	0	105	90	34	36	57	54	32	18	228	100%
Fort Yukon	225	56	0	0	568	451	435	78	269	253	540	295	1,812	17%
Venetie	80	24	0	0	0	0	0	0	0	0	0	0	0	–
Chalkyitsik	29	14	0	0	28	34	0	0	62	68	29	7	119	0%
District 5	501	172	0	0	9,647	4,382	4,589	1,469	888	410	3,860	1,884	18,984	66%
Survey totals	2,793	1,175	1,076	1,155	36,333	5,174	28,433	4,990	11,264	1,382	15,553	2,492	92,659	70%

Note: The estimated harvest in surveyed communities is based on a stratified random sample of households as designated for the estimation of subsistence salmon harvests. Estimates include a 95% confidence interval (CI 95%).

[a] Large whitefish are considered to be 4 pounds or larger and small whitefish are considered to be less than 4 pounds.

[b] The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted for a given species.

[c] Households were asked to categorize their harvest of large whitefish as either broad whitefish or humpback whitefish. The estimated remaining percent were humpback whitefish.

Table 11.–Reported subsistence harvest of other miscellaneous fish species by surveyed communities, Yukon Area, 2013.

Community	Total households	Households contacted [a]	Reported harvest of miscellaneous fish species (not expanded by harvest group)									
			Alaska blackfish	Arctic char	Arctic grayling	Arctic lamprey [b]	Burbot	Longnose sucker	Pacific halibut [c]	Pacific herring [d]	Sockeye salmon [e]	Tomcod
Hooper Bay	227	96	4,627	2	0	0	157	0	190	2,306	7	2,082
Scammon Bay	114	47	9,345	3	0	0	66	0	327	5,076	12	1,445
Coastal District	341	143	13,972	5	0	0	223	0	517	7,382	19	3,527
Nunam Iqua	38	21	2,660	0	0	0	38	0	0	0	5	31
Alakanuk	151	61	4,842	0	0	6	90	0	23	0	28	1,131
Emmonak	194	103	13,681	1	0	1	553	0	0	0	6	210
Kotlik	117	54	6,370	8	46	0	68	0	7	1,700	36	130
District 1	500	239	27,553	9	46	7	749	0	30	1,700	75	1,502
Mountain Village	166	58	9,960	2	80	14	224	1	0	0	68	167
Pitkas Point	29	21	3,570	0	6	0	47	0	0	0	2	0
St. Marys [f]	144	60	2,315	6	39	27	455	0	0	0	19	0
Pilot Station [f]	125	61	5,145	1	10	7	8	0	4	0	2	25
Marshall [f]	102	32	0	0	0	1,324	7	0	0	0	25	0
District 2	566	232	20,990	9	135	1,372	741	1	4	0	116	192
Russian Mission [f]	81	28	70	4	17	1,172	120	7	0	0	24	0
Holy Cross	57	28	0	0	28	0	25	0	0	0	10	0
Shageluk	28	19	0	0	0	0	6	0	0	0	0	0
District 3	166	75	70	4	45	1,172	151	7	0	0	34	0
Anvik [f]	33	31	0	0	49	54	27	0	0	0	2	0
Grayling [f]	51	40	0	9	76	985	1	0	0	0	0	0
Kaltag	51	15	0	2	206	0	13	0	0	0	0	0
Nulato	86	29	0	107	200	0	32	0	0	0	10	0
Koyukuk	49	12	0	0	0	0	0	0	0	0	2	0
Galena	160	60	350	20	7	0	30	0	0	0	0	0
Ruby	71	22	0	0	0	0	0	0	0	0	0	0
Huslia	93	38	300	0	17	0	18	5	0	0	0	0
Hughes	34	26	0	0	0	0	2	0	0	0	0	0
Allakaket	58	24	0	0	47	0	6	83	0	0	0	0
Alatna	7	3	0	0	20	0	0	0	0	0	0	0
Bettles	26	14	0	0	11	0	0	0	0	0	0	0
District 4	719	314	650	138	633	1,039	129	88	0	0	14	0

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Table 11.–Page 2 of 2.

Community	Total households	Households contacted [a]	Reported harvest of miscellaneous fish species (not expanded by harvest group)									
			Alaska blackfish	Arctic char	Arctic grayling	Arctic lamprey [b]	Longnose sucker	Burbot	Pacific halibut [c]	Pacific herring [d]	Sockeye salmon [e]	Tomcod
Tanana	100	43	0	2	4	0	60	56	0	0	0	0
Stevens Village	19	13	0	0	0	0	4	0	0	0	0	0
Birch Creek	16	2	0	0	0	0	0	0	0	0	0	0
Beaver	32	20	0	0	0	0	2	0	0	0	0	0
Fort Yukon	225	56	0	0	3	0	18	14	0	0	0	0
Venetie	80	24	0	0	563	0	0	50	0	0	0	0
Chalkyitsik	29	14	0	0	6	0	0	2	0	0	0	0
District 5	501	172	0	2	576	0	84	122	0	0	0	0
Survey totals	2,793	1,175	63,235	167	1,435	3,590	180	2,115	551	9,082	258	5,221

[a] The number of households contacted per species may vary. The number of households indicated is the greatest number of households contacted in a community for any species.

[b] Surveys are conducted before the Arctic lamprey fishery occurs in November and December. Consequently totals are for previous year harvest (i.e., the 2013 reported harvest is for the 2012 calendar year).

[c] Includes reported harvest of flounders and unspecified flatfish species.

[d] Includes harvest of small fish reported as smelt.

[e] Due to low harvest numbers of sockeye salmon and difficulties with identification by fishermen, the harvest is not expanded by harvest groups in each community.

[f] Includes Arctic lamprey harvest reported on postcards.

Table 12.–Responses to survey question assessing percentage of subsistence salmon needs being met, by community, by species, Yukon Area, 2013.

		Percent of households (HH's) that responded to subsistence needs met question, by community, by species									
		Chinook salmon					Summer chum salmon				
Community	Total households	Total number of household responses	% HH's responses 0% to 25%	% HH's responses 26% to 50%	% HH's responses 51% to 75%	% HH's responses 76% to 100%	Total number of household responses	% HH's responses 0% to 25%	% HH's responses 26% to 50%	% HH's responses 51% to 75%	% HH's responses 76% to 100%
Hooper Bay	227	73	23%	10%	3%	64%	70	11%	6%	9%	74%
Scammon Bay	114	42	48%	14%	5%	33%	32	13%	16%	3%	69%
Coastal District	341	115	32%	11%	3%	53%	102	12%	9%	7%	73%
Nunam Iqua	38	10	90%	0%	10%	0%	11	9%	18%	9%	64%
Alakanuk	151	44	82%	5%	2%	11%	42	21%	17%	10%	52%
Emmonak	194	67	85%	4%	4%	6%	73	51%	10%	8%	32%
Kotlik	117	45	58%	22%	11%	9%	27	30%	7%	22%	41%
District 1	500	166	77%	9%	6%	8%	153	36%	12%	11%	41%
Mountain Village	166	48	81%	10%	2%	6%	41	34%	12%	5%	49%
Pitkas Point	29	13	92%	8%	0%	0%	11	9%	9%	18%	64%
St. Marys	144	49	82%	14%	2%	2%	40	18%	5%	18%	60%
Pilot Station	125	44	86%	5%	2%	7%	37	51%	8%	5%	35%
Marshall	102	27	93%	0%	4%	4%	20	40%	15%	10%	35%
District 2	566	181	85%	8%	2%	4%	149	33%	9%	10%	48%
Russian Mission	81	22	95%	0%	5%	0%	16	25%	6%	19%	50%
Holy Cross	57	18	89%	11%	0%	0%	9	56%	0%	22%	22%
Shageluk	28	5	100%	0%	0%	0%	4	25%	25%	0%	50%
District 3	166	45	93%	4%	2%	0%	29	34%	7%	17%	41%

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Table 12.–Page 2 of 4.

Community	Total Households	Percent of households (HH's) that responded to subsistence needs met question, by community, by species: Chinook salmon: Total number of household responses	Chinook salmon: % HH's responses 0% to 25%	Chinook salmon: % HH's responses 26% to 50%	Chinook salmon: % HH's responses 51% to 75%	Chinook salmon: % HH's responses 76% to 100%	Summer chum salmon: Total number of household responses	Summer chum salmon: % HH's responses 0% to 25%	Summer chum salmon: % HH's responses 26% to 50%	Summer chum salmon: % HH's responses 51% to 75%	Summer chum salmon: % HH's responses 76% to 100%
Anvik	33	21	81%	0%	5%	14%	17	18%	6%	18%	59%
Grayling	51	26	73%	12%	0%	15%	15	20%	7%	0%	73%
Kaltag	51	10	40%	20%	10%	30%	1	0%	0%	0%	100%
Nulato	86	22	59%	18%	0%	23%	6	50%	0%	0%	50%
Koyukuk	49	8	63%	25%	13%	0%	3	0%	33%	33%	33%
Galena	160	37	81%	5%	5%	8%	4	25%	25%	25%	25%
Ruby	71	16	75%	0%	6%	19%	2	50%	0%	0%	50%
Huslia	93	10	70%	10%	10%	10%	9	22%	44%	0%	33%
Hughes	34	13	85%	15%	0%	0%	4	25%	25%	0%	50%
Allakaket	58	6	100%	0%	0%	0%	4	25%	25%	0%	50%
Alatna	7	3	100%	0%	0%	0%	3	33%	0%	0%	67%
Bettles	–	–	–	–	–	–	–	–	–	–	–
District 4	693	172	74%	9%	4%	13%	68	24%	15%	7%	54%
Tanana	100	26	38%	23%	12%	27%	6	17%	0%	0%	83%
Stevens Village	19	5	60%	20%	20%	0%	1	0%	0%	0%	100%
Birch Creek	–	–	–	–	–	–	–	–	–	–	–
Beaver	32	10	60%	0%	10%	30%	–	–	–	–	–
Fort Yukon	225	38	71%	11%	3%	16%	1	0%	0%	0%	100%
Venetie	80	7	43%	43%	0%	14%	1	100%	0%	0%	0%
Chalkyitsik	29	4	50%	0%	0%	50%	–	–	–	–	–
District 5	485	90	57%	16%	7%	21%	9	22%	0%	0%	78%
Survey totals	2,751	769	70%	10%	4%	16%	510	27%	8%	9%	56%

-continued-

Table 12.–Page 3 of 4.

Community	Total Households	Percent of households (HH's) that responded to subsistence needs met question, by community, by species: Fall Chum salmon: Total number of household responses	Fall Chum salmon: % HH's responses 0% to 25%	Fall Chum salmon: % HH's responses 26% to 50%	Fall Chum salmon: % HH's responses 51% to 75%	Fall Chum salmon: % HH's responses 76% to 100%	Coho salmon: Total number of household responses	Coho salmon: % HH's responses 0% to 25%	Coho salmon: % HH's responses 26% to 50%	Coho salmon: % HH's responses 51% to 75%	Coho salmon: % HH's responses 76% to 100%
Hooper Bay	227	4	0%	0%	0%	100%	4	50%	0%	0%	50%
Scammon Bay	114	5	40%	0%	0%	60%	7	29%	14%	0%	57%
Coastal District	341	9	22%	0%	0%	78%	11	36%	9%	0%	55%
Nunam Iqua	38	6	17%	17%	0%	67%	6	33%	0%	0%	67%
Alakanuk	151	17	59%	6%	6%	29%	5	20%	0%	0%	80%
Emmonak	194	28	82%	4%	0%	14%	16	63%	6%	6%	25%
Kotlik	117	23	48%	22%	4%	26%	16	44%	19%	0%	38%
District 1	500	74	61%	11%	3%	26%	43	47%	9%	2%	42%
Mountain Village	166	14	64%	14%	0%	21%	12	33%	25%	0%	42%
Pitkas Point	29	5	80%	0%	0%	20%	1	0%	0%	0%	100%
St. Marys	144	24	54%	8%	4%	33%	7	57%	14%	0%	29%
Pilot Station	125	19	84%	5%	0%	11%	5	80%	20%	0%	0%
Marshall	102	12	67%	0%	0%	33%	11	55%	9%	0%	36%
District 2	566	74	68%	7%	1%	24%	36	50%	17%	0%	33%
Russian Mission	81	8	38%	0%	13%	50%	4	50%	0%	0%	50%
Holy Cross	57	9	33%	11%	0%	56%	2	100%	0%	0%	0%
Shageluk	28	3	33%	0%	0%	67%	3	33%	0%	33%	33%
District 3	166	20	35%	5%	5%	55%	9	56%	0%	11%	33%

-continued-

Table 12.–Page 4 of 4.

		Percent of households (HH's) that responded to subsistence needs met question, by community, by species									
		Fall chum salmon					Coho salmon				
Community	Total Households	Total number of household responses	% HH's responses 0% to 25%	% HH's responses 26 % to 50%	% HH's responses 51% to 75%	% HH's responses 76% to 100%	Total number of household responses	% HH's responses 0% to 25%	% HH's responses 26 % to 50%	% HH's responses 51% to 75%	% HH's responses 76% to 100%
Anvik	33	19	26%	5%	21%	47%	6	17%	0%	0%	83%
Grayling	51	16	31%	13%	0%	56%	6	33%	0%	0%	67%
Kaltag	51	10	0%	10%	10%	80%	1	0%	0%	0%	100%
Nulato	86	17	12%	12%	0%	76%	2	0%	0%	0%	100%
Koyukuk	49	6	33%	33%	0%	33%	2	50%	0%	0%	50%
Galena	160	16	75%	13%	0%	13%	–	–	–	–	–
Ruby	71	12	17%	25%	0%	58%	2	50%	0%	0%	50%
Huslia	93	7	29%	0%	14%	57%	2	0%	0%	0%	100%
Hughes	34	7	43%	14%	14%	29%	2	50%	0%	0%	50%
Allakaket	58	6	50%	0%	17%	33%	5	60%	20%	0%	20%
Alatna	7	1	100%	0%	0%	0%	–	–	–	–	–
Bettles	–	–	–	–	–	–	–	–	–	–	–
District 4	693	117	32%	12%	7%	50%	28	32%	4%	0%	64%
Tanana	100	21	24%	10%	5%	62%	5	0%	0%	0%	100%
Stevens Village	19	3	0%	0%	0%	100%	–	–	–	–	–
Birch Creek	–	–	–	–	–	–	–	–	–	–	–
Beaver	32	2	0%	0%	0%	100%	–	–	–	–	–
Fort Yukon	225	22	27%	5%	0%	68%	1	100%	0%	0%	0%
Venetie	80	8	13%	13%	13%	63%	2	50%	0%	0%	50%
Chalkyitsik	29	3	0%	0%	0%	100%	1	100%	0%	0%	0%
District 5	485	59	20%	7%	3%	69%	9	33%	0%	0%	67%
Survey totals	2,751	353	40%	7%	3%	50%	136	42%	7%	2%	49%

Note: Dashes indicate indefinable values.

Table 13.–Reported subsistence and personal use fish harvested under the authority of a permit, listed by permit area, Yukon Area, 2013.

Subsistence fishing permit area	Permit [a] Type	Issued [b]	Returned	Percent returned	Number of permits returned that fished [c]	Reported harvest: Chinook [d]	Summer chum [d]	Fall chum [d]	Coho [d]	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Koyukuk Middle and South Fork Rivers	SF	1	1	100%	1	0	0	0	0	8	0	6	0	25	25
Yukon River Rampart Area	SR	23	22	96%	18	474	579	300	0	27	2	0	0	0	5
Yukon River near Haul Road Bridge [e]	SY	49	48	98%	22	379	1,020	1,055	0	62	5	4	16	0	0
Yukon River near	SE	30	27	90%	17	198	66	7,652	150	130	22	3	7	1	70
Circle and Eagle [f]	SEU	21	20	95%	15	152	50	12,642	0	64	8	2	0	13	7
Tanana River Subdistrict 6A	SA	19	19	100%	12	218	88	1,478	421	18	2	1	6	0	0
Tanana River Subdistrict 6B	SB	93	88	95%	38	148	1,006	9,573	4,583	1,026	7	28	10	11	2
Tanana River Upstream of Subdistrict 6C	SU	52	46	88%	16	0	0	0	0	1,314	0	20	130	170	98
Kantishna River Subdistrict 6A	SK	3	3	100%	2	0	0	314	144	13	0	0	0	0	0
Tolovana River Pike Subdistrict 6B	ST	77	74	96%	45	0	0	60	42	15	1	3	231	9	0
subsistence permit subtotals		368	348	95%	186	1,569	2,809	33,074	5,340	2,677	47	67	400	229	207

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Table 13.–Page 2 of 2.

Personal use permit fishing permit area	Permit [a] Type	Issued [b]	Returned	Percent returned	Number of permits returned that fished [c]	Reported harvest: Chinook [d]	Summer chum [d]	Fall chum [d]	Coho [d]	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Tanana River salmon subdistrict 6-C	PC	53	52	98%	29	42	138	363	124	24	1	0	0	0	3
Tanana River whitefish upstream of subdistrict 6-C	PW	14	14	100%	7	0	0	20	8	65	0	1	3	118	0
Personal Use permit subtotals		67	66	99%	36	42	138	383	132	89	1	1	3	118	3
All permit totals		435	414	95%	222	1,611	2,947	33,457	5,472	2,766	48	68	403	347	210

Note: Permit type is the first letter in the code used on permits that refers to the fishery type (S = subsistence or P = personal use), the second letter of the code refers to a particular fishing area or species targeted.

[a] Permits returned as of March 20, 2014.

[b] Includes 34 households that were issued permits for more than 1 area.

[c] Includes 10 households that fished in 2 different permit areas.

[d] Does not include District 6 commercial related harvest of 1 Chinook, 96 fall chum, and 1 coho salmon that were caught but not sold.

[e] Includes harvest from residents of Stevens Village, which is a surveyed community near a permit area. To avoid double counting, these salmon were not added to subsistence harvest estimates from Stevens Village.

[f] Does not include 3 Chinook salmon that could not be released live from the Eagle sonar test fishery project and were given to residents of Eagle. Harvest taking place between the sonar location and the U.S./Canada border is reported on these permits.

Table 14.–Reported subsistence and personal use fish harvested under the authority of a permit, listed by fishery, by community of residence, and by drainage, Yukon Area, 2013.

Subsistence permit community	Harvest by drainage	Permits		Percent returned	Number of permits fished [b]	Reported harvest									
		Issued [a]	Returned			Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Central	Yukon River	4	4	100%	2	21	0	0	0	0	1	0	0	0	0
	Tanana River	1	1	100%	0	0	0	0	0	0	0	0	0	0	0
	Central subtotal	5	5	100%	2	21	0	0	0	0	1	0	0	0	0
Circle	Yukon River	14	12	86%	8	157	66	1,397	150	55	4	0	0	0	13
Eagle	Yukon River	23	22	96%	19	172	50	18,871	0	139	25	5	7	14	64
Fairbanks (FNSB) [c]	Yukon River	60	59	98%	32	610	1,350	1,160	0	80	7	4	16	0	0
	Tanana River	23	23	100%	14	49	143	5,546	2,552	677	7	1	61	61	2
	Tolovana River	61	61	100%	41	0	0	0	0	0	0	0	225	9	0
	Kantishna River	0	0	0%	0	0	0	0	0	0	0	0	0	0	0
	FNSB subtotal	144	143	99%	87	659	1,493	6,706	2,552	757	14	5	302	70	2
Healy	Tanana River	2	2	100%	1	0	0	740	200	30	0	1	0	0	0
	Kantishna River	1	1	100%	0	0	0	0	0	0	0	0	0	0	0
	Healy subtotal	3	3	100%	1	0	0	740	200	30	0	1	0	0	0
Manley	Yukon River	1	1	100%	1	30	5	0	0	0	0	0	0	0	0
	Tanana River	12	12	100%	8	165	45	1,459	419	12	1	0	0	0	0
	Tolovana River	0	0	0%	0	0	0	0	0	0	0	0	0	0	0
	Manley subtotal	13	13	100%	9	195	50	1,459	419	12	1	0	0	0	0
Minto	Yukon River	2	2	100%	1	25	50	100	0	0	0	0	0	0	0
	Tanana River	31	28	90%	9	60	258	508	215	73	0	5	0	10	0
	Tolovana River	15	12	80%	4	0	0	60	42	15	1	3	6	0	0
	Minto subtotal	48	42	88%	14	85	308	668	257	88	1	8	6	10	0
Nenana	Yukon River	2	2	100%	1	12	0	0	0	3	0	0	0	0	0
	Tanana River	40	38	95%	18	86	642	2,798	1,618	300	1	22	5	0	0
	Kantishna River	2	2	100%	2	0	0	314	144	13	0	0	0	0	0
	Nenana subtotal	44	42	95%	21	98	642	3,112	1,762	316	1	22	5	0	0

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Table 14.–Page 2 of 2.

Subsistence permit community	Harvest by drainage	Permits Issued [a]	Permits Returned	Percent returned	Number of permits fished [b]	Reported harvest: Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Rampart	Yukon River	3	2	67%	2	35	5	100	0	5	0	0	0	0	5
Stevens Village	Yukon River	3	3	100%	2	83	150	0	0	0	0	0	0	0	0
Upper Tanana Villages (UTV) [d]	Yukon River	5	4	80%	1	0	0	21	0	0	0	0	0	0	0
	Tanana River	51	45	88%	15	0	0	0	0	1,264	0	20	80	110	98
	UTV subtotal	56	49	88%	16	0	0	21	0	1,264	0	20	80	110	98
Other subsistence [e]	Yukon River	6	6	100%	3	58	39	0	0	1	0	0	0	0	0
	Tanana River	4	4	100%	1	6	6	0	0	2	0	0	0	0	0
	Tolovana River	1	1	100%	0	0	0	0	0	0	0	0	0	0	0
	Koyukuk River	1	1	100%	1	0	0	0	0	8	0	6	0	25	25
	Other subtotal	12	12	100%	5	64	45	0	0	11	0	6	0	25	25
Subsistence permit subtotals		368	348	95%	186	1,569	2,809	33,074	5,340	2,677	47	67	400	229	207
Personal Use permit community															
Fairbanks (FNSB) [c]	Tanana River	62	61	98%	32	42	68	383	132	69	1	0	3	9	3
Other Personal use [f]	Tanana River	5	5	100%	4	0	70	0	0	20	0	1	0	109	0
Personal use permit subtotals		67	66	99%	36	42	138	383	132	89	1	1	3	118	3
All permit totals		435	414	95%	222	1,611	2,947	33,457	5,472	2,766	48	68	403	347	210

Note: Does not include salmon from test fishery projects or salmon retained from commercial fisheries. Information is from permits returned as of March 20, 2014.

[a] Includes 34 households that were issued permits for more than 1 area including 1 permit holder issued an additional permit to track harvest above and below the mainstem Yukon River sonar project operated downstream of Eagle.

[b] Includes 10 households that fished in more than 1 permit area.

[c] Fairbanks North Star Borough (FNSB) includes residents from the communities of Ester, Fairbanks, North Pole, Salcha, and Two Rivers.

[d] Upper Tanana Villages (UTV) include residents from the communities of Delta Junction, Dot Lake, Northway, Tanacross, and Tok.

[e] Other Subsistence represents residents from Anchorage, Chugiak, Lake Minchumina, Nome, Palmer, Tanana, Wasilla, and Wiseman who were issued a subsistence fishing permit.

[f] Other personal use includes residents from Delta Junction, Nenana, and Wasilla who were issued a personal use permit.

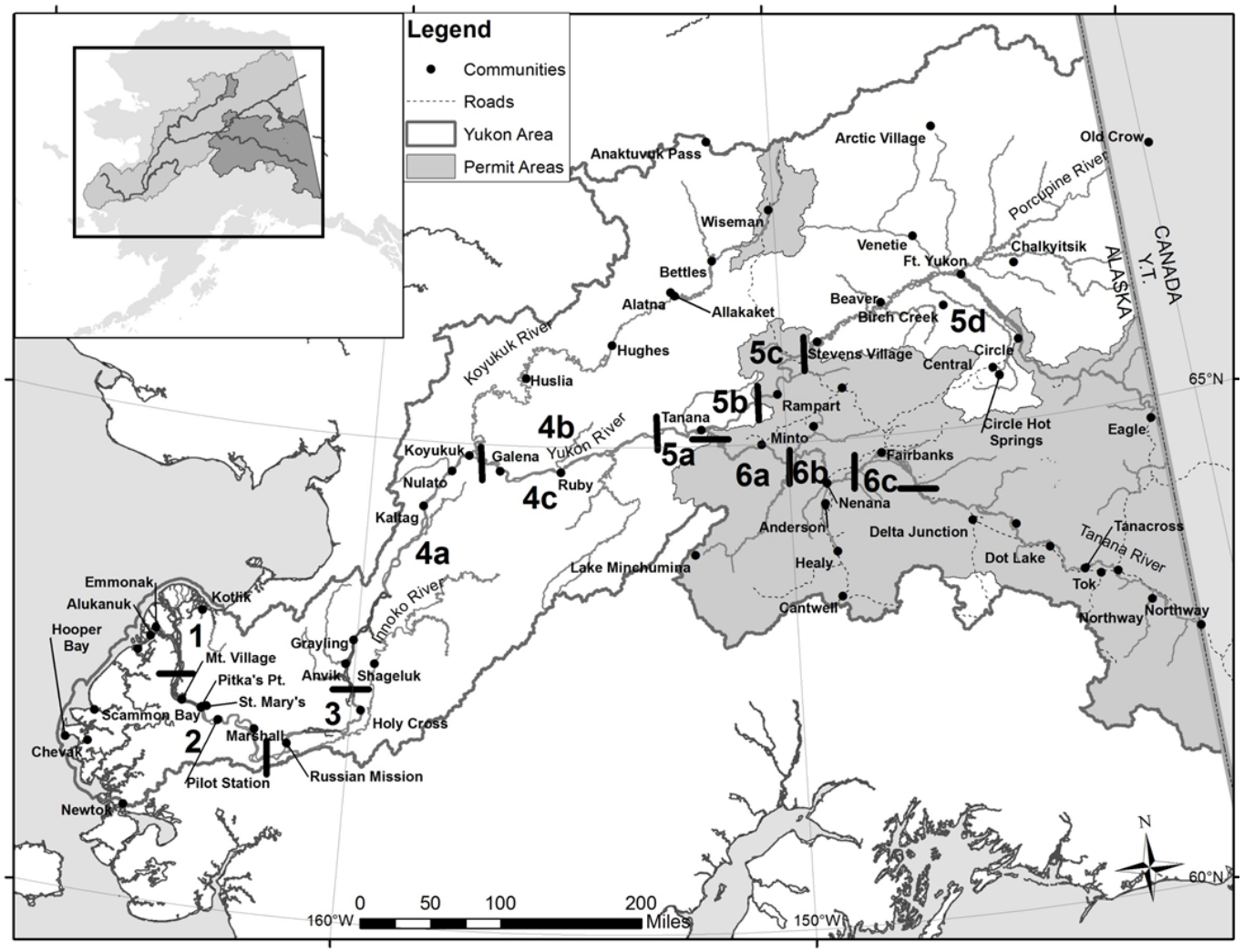
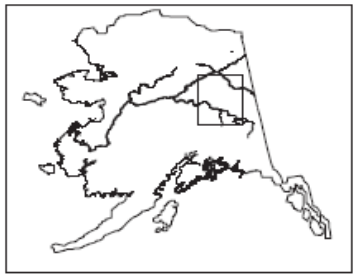


Figure 1.–Map of Alaska portion of Yukon River drainage showing communities and subsistence and personal use permit areas.

Note: Subsistence and personal use permit areas are shaded.

5 AAC 99.015 JOINT BOARD NONSUBSISTENCE AREAS. (4) The Fairbanks Nonsubsistence Area is comprised of the following: within Unit 20(A) as defined by 5 AAC 92.450(20)(A) east of the Wood River drainage and south of the Rex Trail but including the upper Wood River drainage south of its confluence with Chicken Creek, within Unit 20(B) as defined by 5AAC 92.450(20)(B) the North Star Borough and that portion of the Washington Creek drainage east of the Elliot Highway, within 20(D) as defined by 5 AAC 92.450(20)(D) west of the Tanana River between its confluence's with the Johnson and Delta Rivers, west of the west bank of the Johnson River, and north and west of the Volkmar drainage, including the Goodpaster River drainage, and within Unit 25(C) as defined by 5 AAC 92.450(25)(C) the Preacher and Beaver Creek drainages.



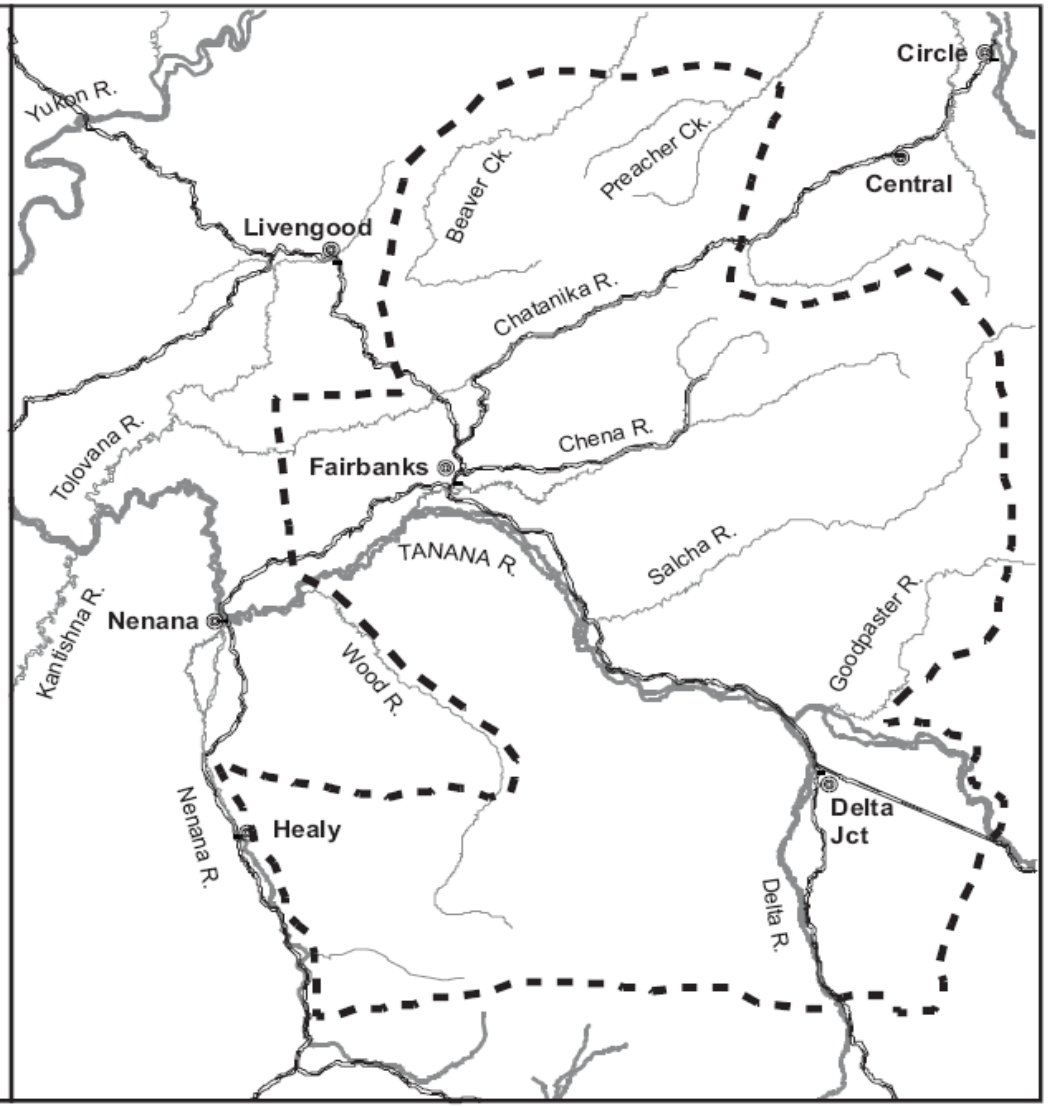
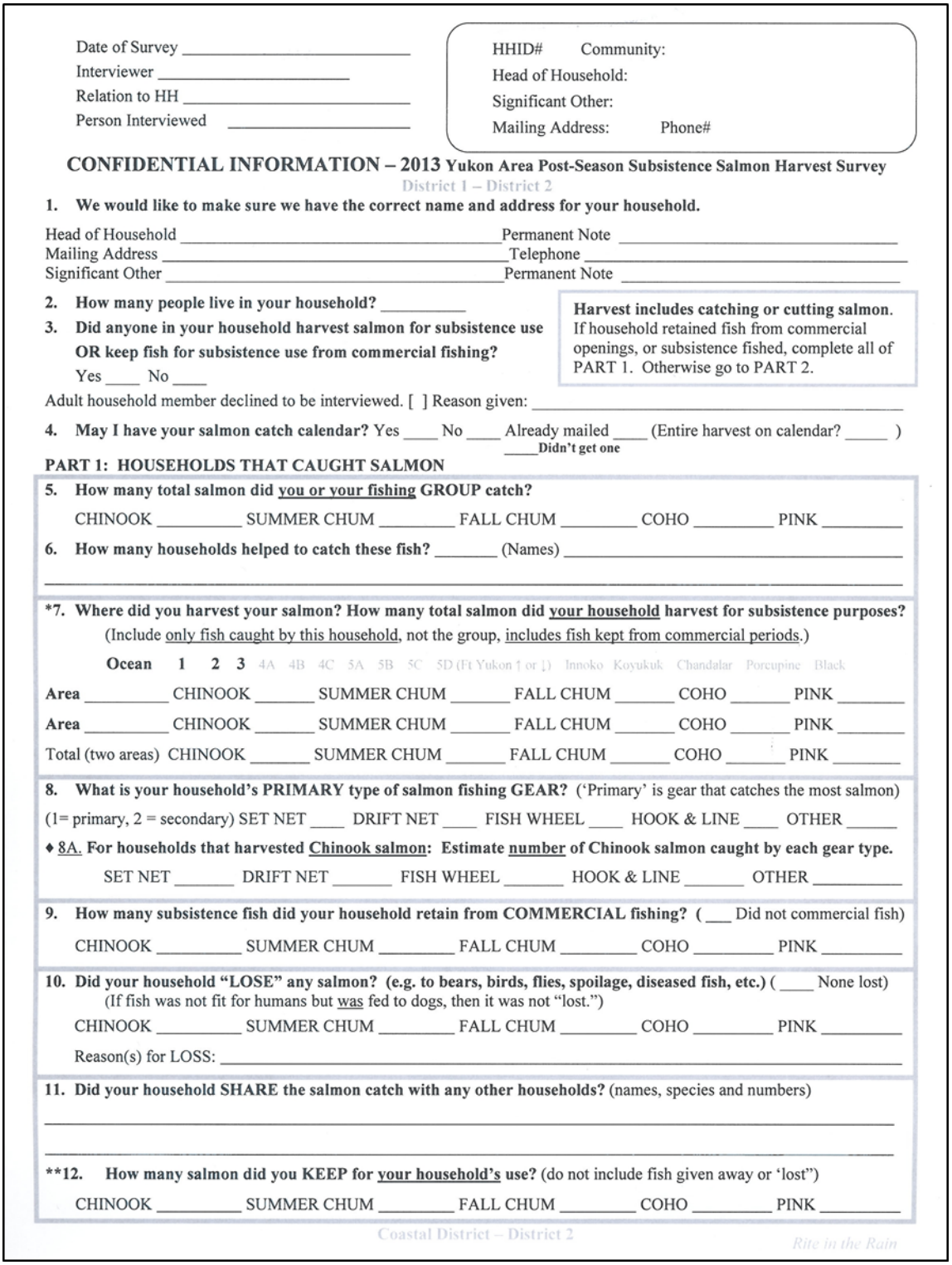


Figure 2.–Map of the Fairbanks Nonsubsistence Area.



Date of Survey _____
Interviewer _____
Relation to HH _____
Person Interviewed _____

HHID# Community:
Head of Household:
Significant Other:
Mailing Address: Phone#

CONFIDENTIAL INFORMATION – 2013 Yukon Area Post-Season Subsistence Salmon Harvest Survey

District 1 – District 2

1. We would like to make sure we have the correct name and address for your household.

Head of Household _____ Permanent Note _____
Mailing Address _____ Telephone _____
Significant Other _____ Permanent Note _____

2. How many people live in your household? _____

3. Did anyone in your household harvest salmon for subsistence use OR keep fish for subsistence use from commercial fishing?
Yes ____ No ____

Harvest includes catching or cutting salmon. If household retained fish from commercial openings, or subsistence fished, complete all of PART 1. Otherwise go to PART 2.

Adult household member declined to be interviewed. [ ] Reason given: _____

4. May I have your salmon catch calendar? Yes ____ No ____ Already mailed ____ (Entire harvest on calendar? _____)
____**Didn't get one**

PART 1: HOUSEHOLDS THAT CAUGHT SALMON

5. How many total salmon did you or your fishing GROUP catch?
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

6. How many households helped to catch these fish? _____ (Names) _____

***7. Where did you harvest your salmon? How many total salmon did your household harvest for subsistence purposes?**
(Include only fish caught by this household, not the group, includes fish kept from commercial periods.)

Ocean 1 2 3 4A 4B 4C 5A 5B 5C 5D (Ft Yukon ↑ or ↓) Innoko Koyukuk Chandalar Porcupine Black

Area _____ CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
Area _____ CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
Total (two areas) CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

8. What is your household's PRIMARY type of salmon fishing GEAR? ('Primary' is gear that catches the most salmon)
(1= primary, 2 = secondary) SET NET ____ DRIFT NET ____ FISH WHEEL ____ HOOK & LINE ____ OTHER _____

♦ **8A. For households that harvested Chinook salmon: Estimate number of Chinook salmon caught by each gear type.**
SET NET _____ DRIFT NET _____ FISH WHEEL _____ HOOK & LINE _____ OTHER _____

9. How many subsistence fish did your household retain from COMMERCIAL fishing? (___ Did not commercial fish)
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

10. Did your household "LOSE" any salmon? (e.g. to bears, birds, flies, spoilage, diseased fish, etc.) (____ None lost)
(If fish was not fit for humans but was fed to dogs, then it was not "lost.")
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____
Reason(s) for LOSS: _____

11. Did your household SHARE the salmon catch with any other households? (names, species and numbers)
_____
_____

****12. How many salmon did you KEEP for your household's use?** (do not include fish given away or 'lost")
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

Coastal District – District 2

Rite in the Rain

Figure 3.–Yukon Area postseason subsistence salmon harvest survey form, 2013.

Note: Area specific versions of the survey form were used throughout the drainage. Different versions featured specific fishing areas and other fish species local to the community.

PART 2: TO BE ASKED OF ALL HOUSEHOLDS

****13. Was your household GIVEN any salmon? Yes ____ No ____** Code: S=Subsistence, C=Commercial, T=Test Fish

Code: _____ Fishermen/Project (Name) _____

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

Code: _____ Fishermen/Project (Name) _____

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

14. Did YOUR household get enough salmon this year? (compared to Question 7 or 13). If the household has no need or usually does not harvest the species, indicate '0'. If the number needed/wanted is more/less than the household got, ask why.)

Were you able to harvest or receive enough:

CHINOOK ?	Y / N	How many did you need/want: _____	Comment: _____
SUMMER CHUM ?	Y / N	How many did you need/want: _____	Comment: _____
FALL CHUM ?	Y / N	How many did you need/want: _____	Comment: _____
COHO ?	Y / N	How many did you need/want: _____	Comment: _____

15. Did your household catch any OTHER FISH besides salmon? Yes _____ No _____

(Harvest numbers should include from September/October of last year to now. Large Whitefish are 4 pounds or greater.)

Large whitefish: BROAD _____ HUMPBACK _____ SMALL WHITEFISH (Cisco*, Round whitefish) _____

SHEEFISH _____ BURBOT _____ PIKE _____ BLACKFISH _____ GRAYLING _____ SUCKERS _____

TROUT (Arctic Char) _____ EELS (Lamprey) _____ TOMCOD (Saffron) _____ HERRING _____ HALIBUT _____

*MONTHS WHEN CISCO WERE HARVESTED or Other FISH Notes _____

16. How many SOCKEYE (red) salmon did your household catch? _____ (Mark '0' if household didn't fish for sockeye)

17. How many DOGS (including puppies) does your household have? _____ (if "none" go to question 21)

18. Do you feed WHOLE salmon to your dogs? Yes _____ No _____ Only Feed **SCRAPS** ____ (if "No" go to question 21)

19. Were any of the salmon put up for the dogs from the commercial fishery? Yes _____ No _____

20. Estimate harvest of salmon put up for dogs this year by fishery (numbers should represent WHOLE FISH, not scraps):

(Subsistence) CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

(Commercial) CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

21. Do you have any additional comments? _____

_____

_____

How did this year compare to last year? _____

THANK YOU! THIS INFORMATION IS USED TO DOCUMENT THE SUBSISTENCE SALMON HARVEST WITHIN THE YUKON RIVER DRAINAGE AND TO TRY TO ENSURE THERE WILL BE ENOUGH SALMON FOR THE FUTURE.

Surveyor Comments:

Reminder: How many people live in this Household? _____ Please verify correct address and phone numbers

Official Use - This area is to be filled in by Fish and Game.

HOUSEHOLD'S TOTAL SUBSISTENCE SALMON CATCH (Totals from question *7)

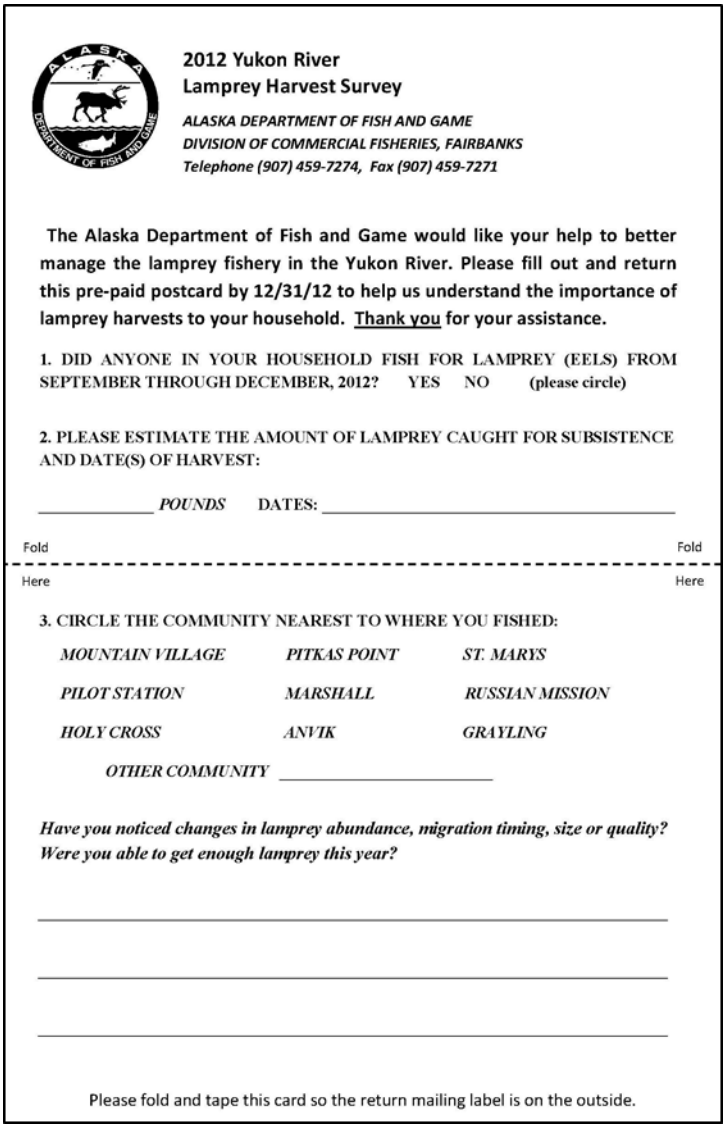
CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

HOUSEHOLD'S TOTAL SUBSISTENCE SALMON USE (Add totals from questions **12 and **13)

CHINOOK _____ SUMMER CHUM _____ FALL CHUM _____ COHO _____ PINK _____

Complete Survey _____ Partial Survey _____ No Survey _____

Figure 3.–Page 2 of 2.



2012 Yukon River
Lamprey Harvest Survey

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES, FAIRBANKS
Telephone (907) 459-7274, Fax (907) 459-7271

The Alaska Department of Fish and Game would like your help to better manage the lamprey fishery in the Yukon River. Please fill out and return this pre-paid postcard by 12/31/12 to help us understand the importance of lamprey harvests to your household. Thank you for your assistance.

1. DID ANYONE IN YOUR HOUSEHOLD FISH FOR LAMPREY (EELS) FROM SEPTEMBER THROUGH DECEMBER, 2012? YES NO (please circle)

2. PLEASE ESTIMATE THE AMOUNT OF LAMPREY CAUGHT FOR SUBSISTENCE AND DATE(S) OF HARVEST:

_____ *POUNDS* DATES: _____

Fold Here Fold Here

3. CIRCLE THE COMMUNITY NEAREST TO WHERE YOU FISHED:

MOUNTAIN VILLAGE	*PITKAS POINT*	*ST. MARYS*
PILOT STATION	*MARSHALL*	*RUSSIAN MISSION*
HOLY CROSS	*ANVIK*	*GRAYLING*

OTHER COMMUNITY _____

Have you noticed changes in lamprey abundance, migration timing, size or quality? Were you able to get enough lamprey this year?

_____

_____

_____

Please fold and tape this card so the return mailing label is on the outside.

Figure 4.–Supplemental postcard mailed to Arctic lamprey harvesting communities in the Yukon Area.

Note: Arctic lamprey harvest survey postcards mailed in November 2012 to all households in the listed communities. Surveys took place in these communities in September 2013, and asked about lamprey harvested in the winter of 2012.

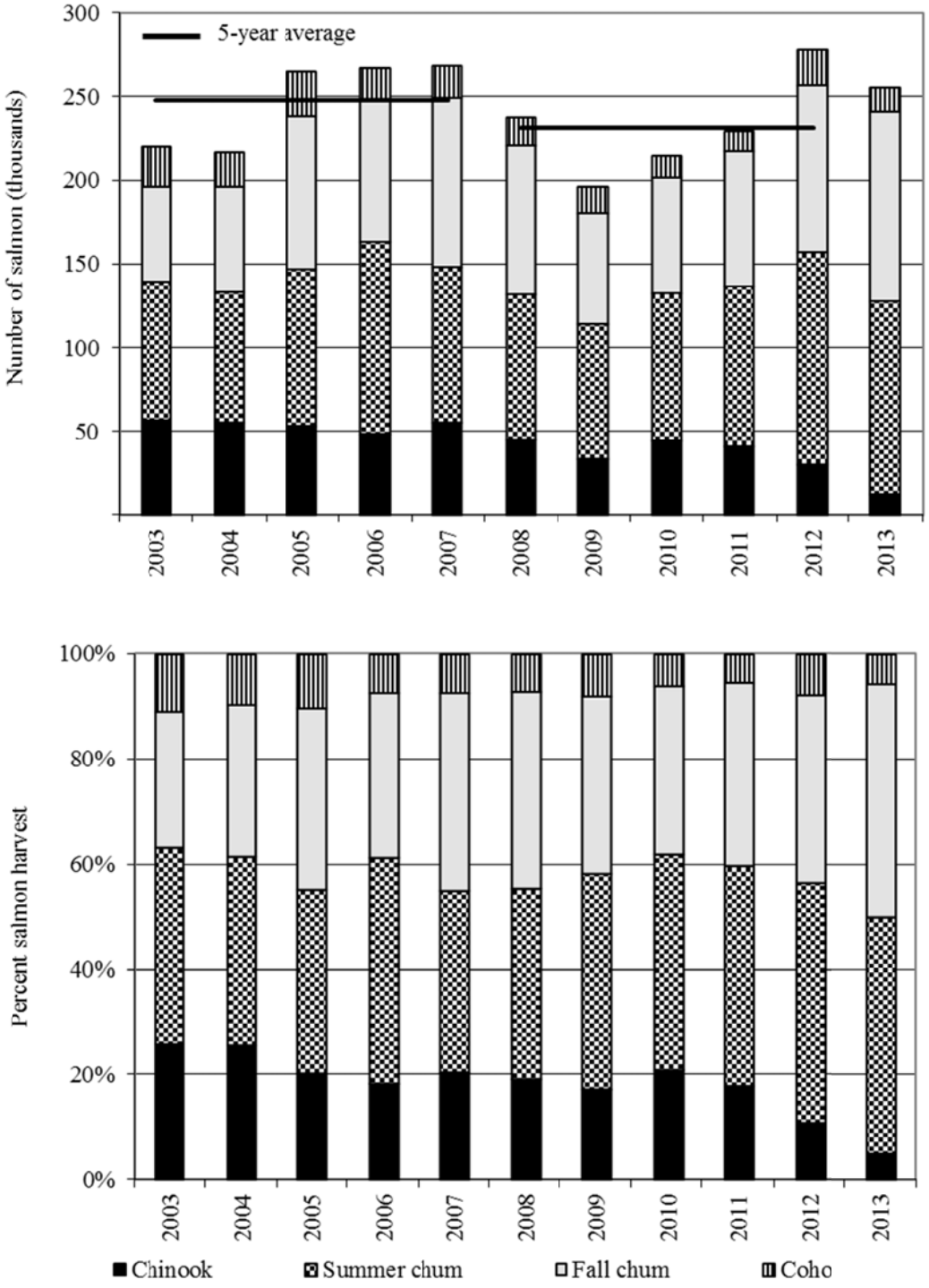


Figure 5.–Estimated total subsistence salmon harvest and percent by species, Yukon Area, 2003–2013.

Note: Annual harvest of salmon species by number (top) and proportion (bottom). Harvest totals include survey, permit, test fish and retained from commercial. Does not include salmon caught in the personal use fishery or summer chum, fall chum, and coho salmon carcasses retained from the commercial fishery and used for subsistence. Does not include approximately 14,500 to 15,000 coho salmon obtained from Valdez Fisheries Development Association as part of Eagle's replacement subsistence salmon fishery in 2003.

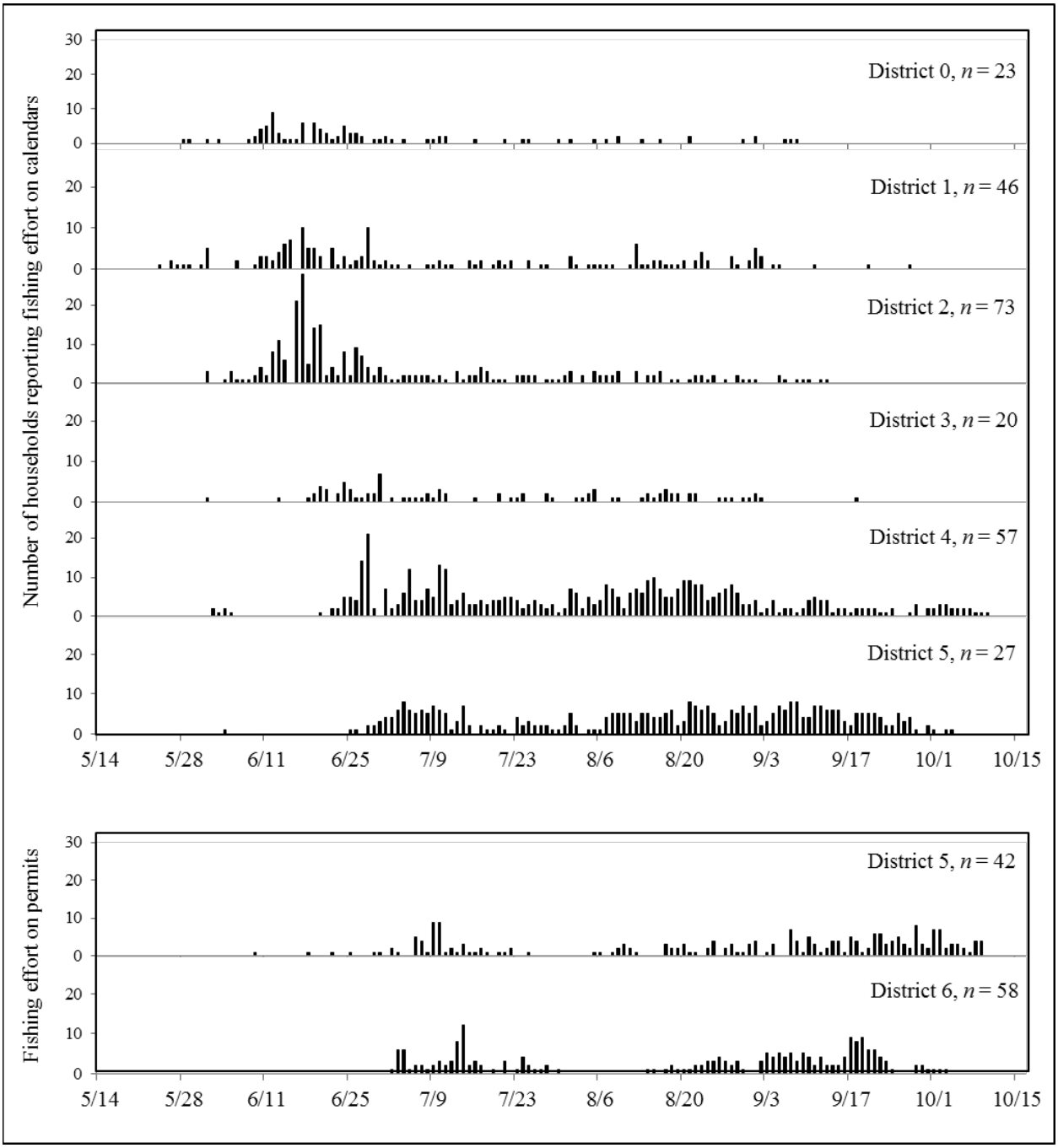


Figure 6.–Subsistence fishing effort, shown as number of households reporting fishing, by day and by district, Yukon Area, 2013.

Note: Top panel: fishing effort by day as recorded on harvest calendars. Bottom panel: fishing effort by day as recorded on permits. District 5 is represented in both panels because it includes both survey and permit communities. Bars represent the number of households in each district that recorded harvest by day on calendars or permits and (*n*) is the total number of calendar or permits that reported harvest. Does not include permits issued in District 6 primarily for the harvest of pike.

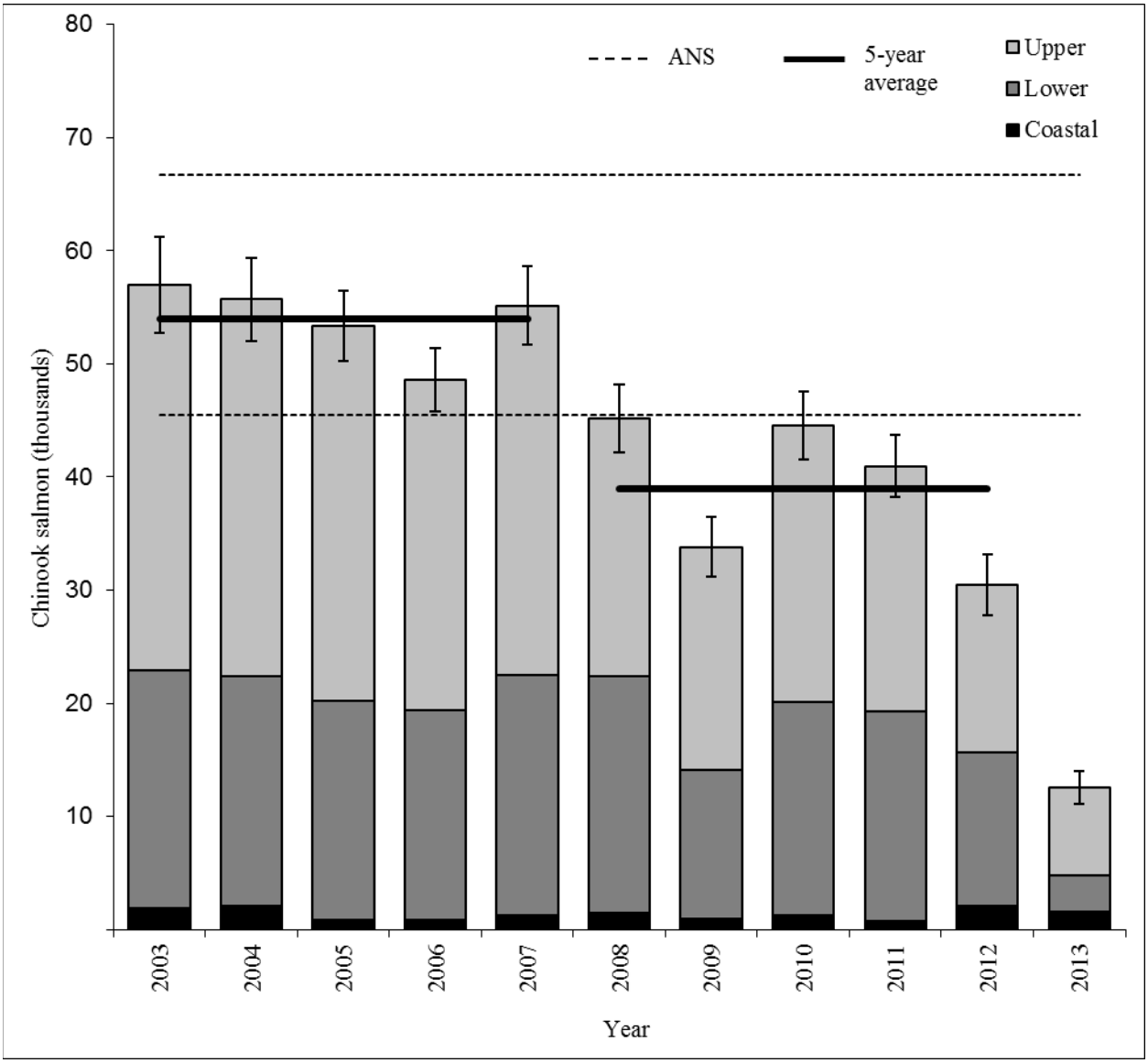


Figure 7.–Estimated Chinook salmon subsistence harvest, Yukon Area, 2003–2013.

Note: Harvest estimates and 95% confidence interval are provided. In 2001 the Alaska Board of Fisheries defined the amount necessary for subsistence (ANS) as 45,500 to 66,704 Chinook salmon. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

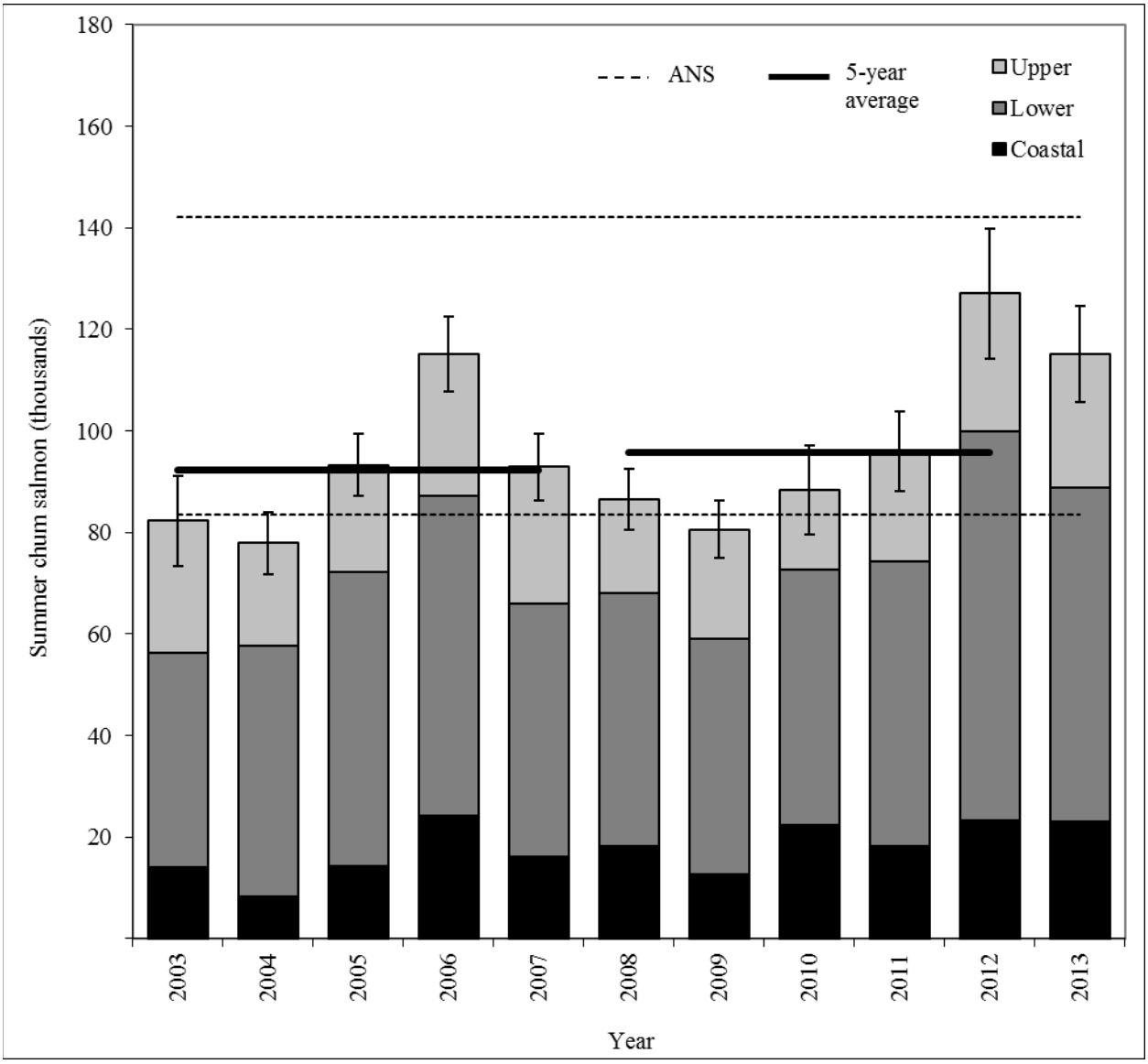


Figure 8.–Estimated summer chum salmon subsistence harvest, Yukon Area, 2003–2013.

Note: Harvest estimates and 95% confidence interval are provided. In 2001, the Alaska Board of Fisheries defined the amount necessary for subsistence (ANS) as 83,500 to 142,192 summer chum salmon. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

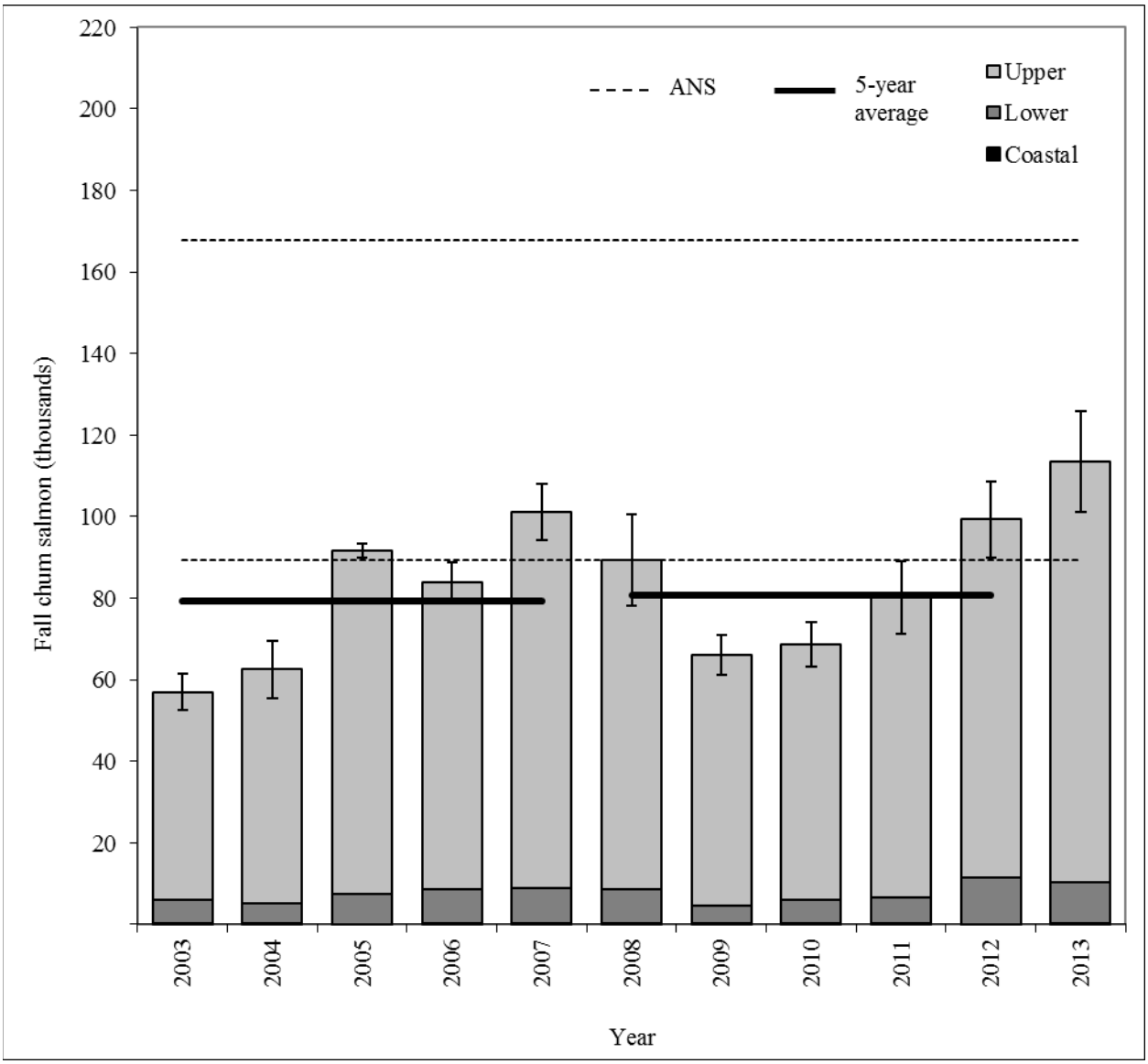


Figure 9.–Estimated fall chum salmon subsistence harvest, Yukon Area, 2003–2013.

Note: Harvest estimates and 95% confidence interval are provided. In 2001, the Alaska Board of Fisheries defined the amount necessary for subsistence (ANS) as 89,500 to 167,900 fall chum salmon. Does not include fall chum salmon sold commercially for roe and carcasses returned to fishermen in District 6. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

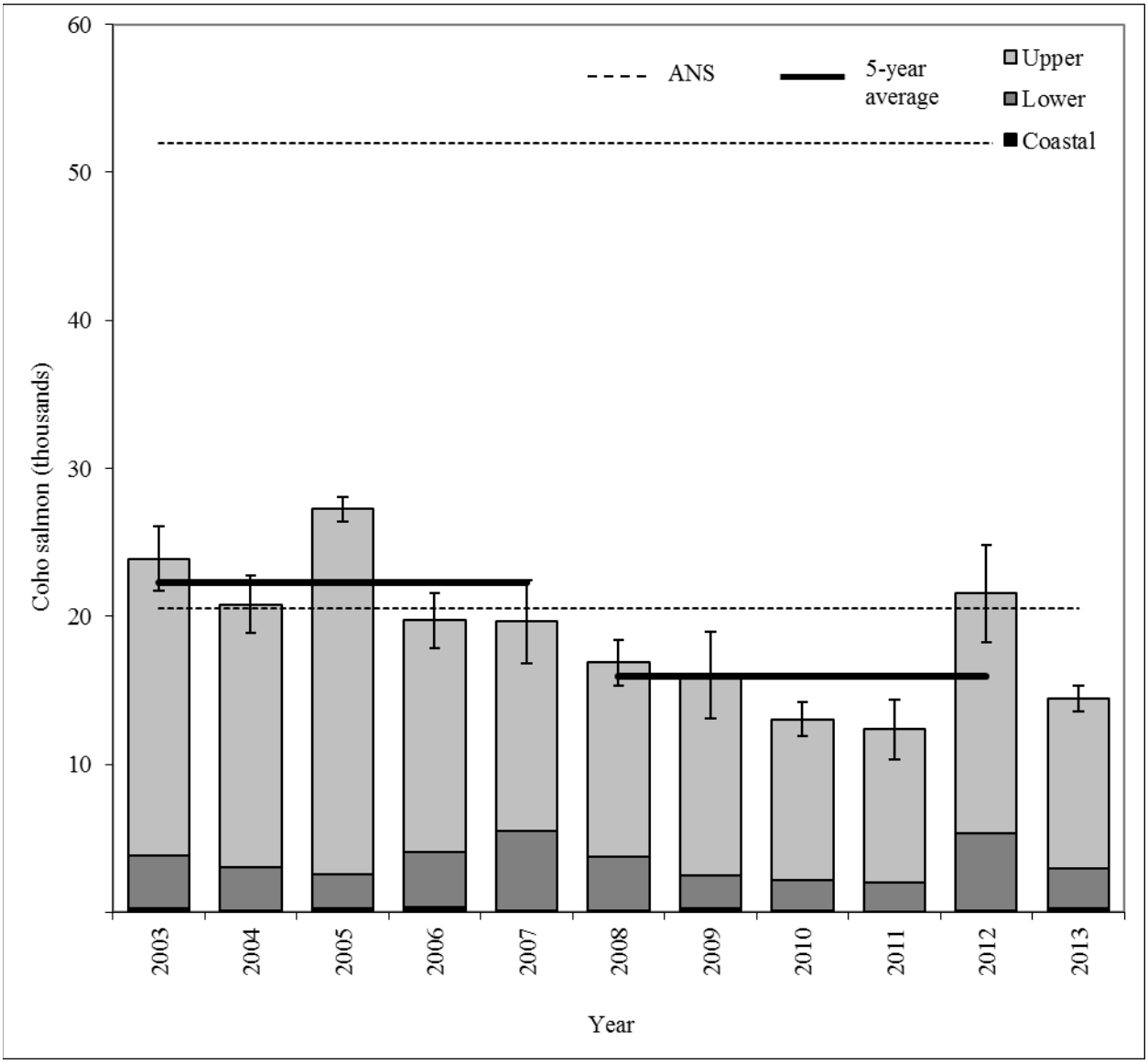


Figure 10.–Estimated coho salmon subsistence harvest, Yukon Area, 2003–2013.

Note: Harvest estimates and 95% confidence interval are provided. In 2001, the Alaska Board of Fisheries defined the amount necessary for subsistence (ANS) as 20,500 to 51,980 coho salmon. Does not include carcasses returned to fishermen from coho salmon sold commercially for roe in District 6. Does not include approximately 14,500 to 15,000 coho salmon obtained from Valdez Fisheries Development Association as part of Eagle's replacement subsistence salmon fishery in 2003. ANS ranges and harvest amounts do not include salmon from the personal use fishery.

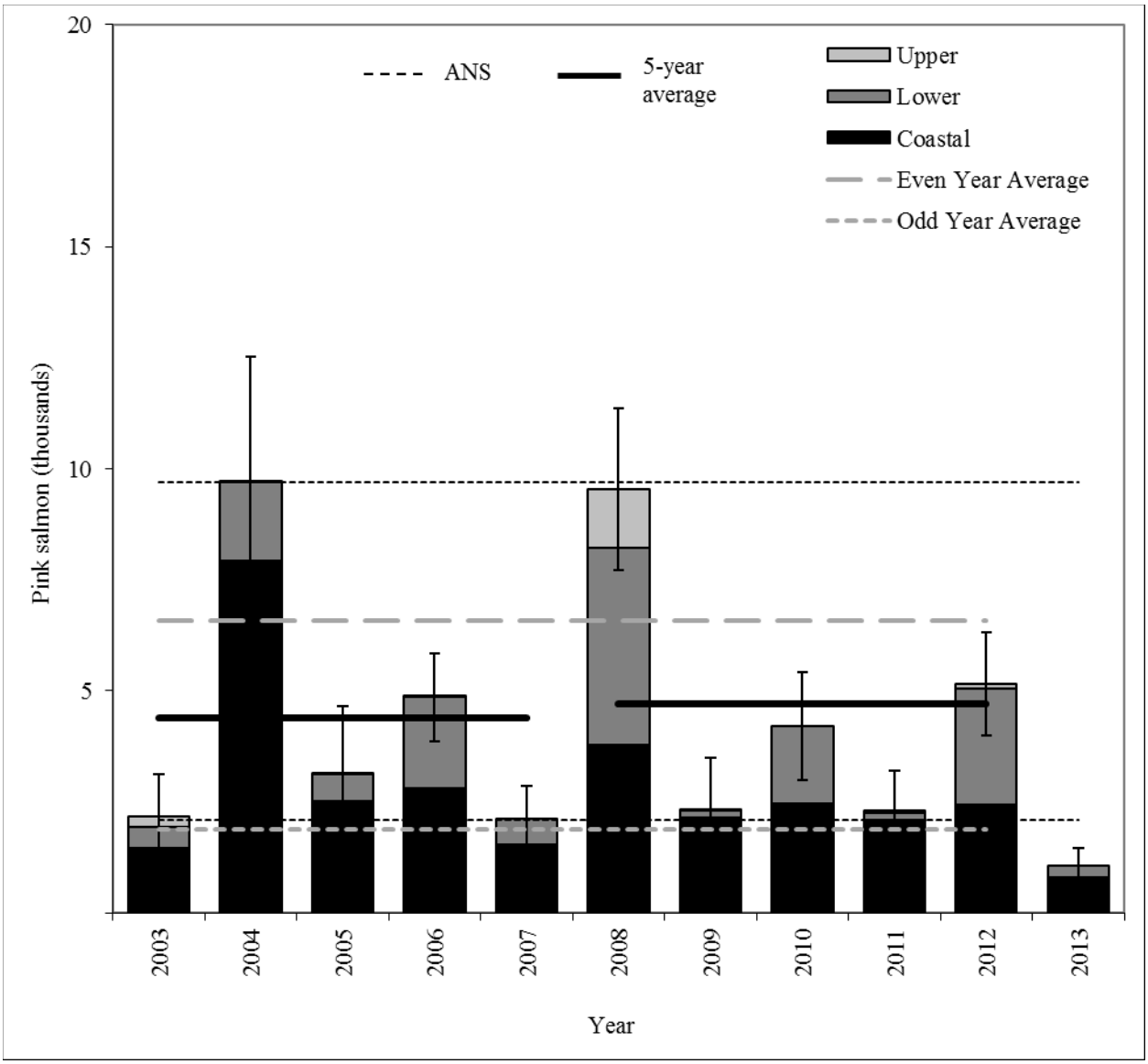


Figure 11.–Estimated pink salmon subsistence harvest, Yukon Area, 2003–2013.

Note: Harvest estimates and 95% confidence interval are provided. In 2013, the Alaska Board of Fisheries defined the amount necessary for subsistence (ANS) as 2,100 to 9,700 pink salmon. Even and odd year averages were calculated from 2003–2012 harvest totals.

APPENDIX A: 2013 HARVEST INFORMATION

Appendix A1.–Estimated Chinook salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	39	17	4.3	1.6	63	16	1.3	0.4	78	21	8.5	2.5	47	42	6.4	0.7	–	–	–	–	227	96	1,210	414
Scammon Bay	32	10	0.4	0.3	19	3	1.3	1.2	38	10	2.1	0.8	25	24	7.4	0.3	–	–	–	–	114	47	332	82
Coastal District	71	27	2.5	0.9	82	19	1.3	0.4	116	31	6.4	1.7	72	66	6.8	0.5	–	–	–	–	341	143	1,542	420
Nunam Iqua	5	4	0.0	0.0	6	1	0.0	–	12	4	0.0	0.0	15	12	0.7	0.1	–	–	–	–	38	21	12	6
Alakanuk	29	11	1.0	0.4	37	10	0.0	0.0	52	12	0.2	0.1	33	28	2.9	0.3	–	–	–	–	151	61	133	35
Emmonak	46	14	0.2	0.2	45	23	0.3	0.1	55	23	1.9	0.8	46	41	2.0	0.2	2	2	2.0	0.0	194	103	224	86
Kotlik	26	12	5.1	1.3	20	6	0.0	0.0	51	17	4.1	1.2	20	18	6.8	0.5	–	–	–	–	117	53	479	145
District 1	106	41	1.6	0.3	108	40	0.1	0.1	170	56	1.9	0.4	114	99	2.9	0.1	2	2	2.0	0.0	500	238	848	170
Mountain Village	33	4	0.0	0.0	31	6	0.0	0.0	65	18	1.3	0.5	37	30	2.2	0.3	–	–	–	–	166	58	266	102
Pitkas Point	5	2	0.0	0.0	4	2	0.0	0.0	13	10	1.8	0.5	7	7	2.0	0.0	–	–	–	–	29	21	37	13
St. Marys	38	11	0.5	0.4	19	5	0.0	0.0	51	14	1.5	0.5	35	29	2.4	0.2	1	1	0.0	–	144	60	204	65
Pilot Station	21	7	0.0	0.0	30	12	0.0	0.0	55	26	1.8	0.5	19	16	2.9	0.4	–	–	–	–	125	61	157	54
Marshall	36	1	0.0	–	13	5	0.6	0.3	33	9	3.9	2.8	19	17	5.0	1.4	1	0	–	–	102	32	328	178
District 2	133	25	0.3	0.2	97	30	0.2	0.1	217	77	1.5	0.3	117	99	2.8	0.3	2	1	0.0	–	566	232	992	216
Russian Mission	17	2	6.5	3.3	17	5	0.0	0.0	37	11	2.5	0.7	10	10	4.3	0.0	–	–	–	–	81	28	236	89
Holy Cross	5	1	0.0	–	17	8	0.0	0.0	22	9	2.7	1.3	13	10	9.8	2.1	–	–	–	–	57	28	204	89
Shageluk	10	3	0.0	0.0	8	7	0.0	0.0	7	6	0.0	0.0	1	1	4.0	–	2	2	0.0	0.0	28	19	4	0
District 3	32	6	0.0	0.0	42	20	0.0	0.0	66	26	2.3	0.6	24	21	7.3	1.1	2	2	0.0	0.0	166	75	444	122
Anvik	4	2	0.5	0.4	6	6	0.0	0.0	14	14	1.7	0.0	8	8	11.9	0.0	1	1	0.0	–	33	31	121	3
Grayling	14	13	1.6	0.2	3	1	0.0	–	24	18	4.2	1.0	10	8	10.3	2.2	–	–	–	–	51	40	226	66
Kaltag	2	0	–	–	10	4	0.0	0.0	33	7	5.3	4.0	6	5	18.2	3.2	–	–	–	–	51	16	348	130
Nulato	16	1	8.0	–	13	4	0.0	0.0	47	16	4.8	1.2	10	8	26.4	3.9	–	–	–	–	86	29	602	171
Koyukuk	6	0	–	–	15	4	3.8	3.2	22	4	12.3	6.7	4	2	17.0	12.0	2	2	21.0	0.0	49	12	898	856
Galena	24	12	1.0	0.7	58	17	0.0	0.0	67	21	3.0	1.7	9	8	5.9	2.0	2	2	0.0	0.0	160	60	275	231
Ruby	15	5	0.0	0.0	35	7	0.0	0.0	13	3	4.3	3.8	7	6	16.5	4.1	1	1	0.0	–	71	22	357	184
Huslia	18	11	0.0	0.0	48	13	0.0	0.0	16	3	2.3	2.1	8	8	1.9	0.0	3	3	12.0	0.0	93	38	62	0
Hughes	5	2	0.0	0.0	16	13	0.1	0.0	10	8	0.1	0.1	2	2	0.0	0.0	1	1	4.0	–	34	26	6	2
Allakaket	11	6	0.0	0.0	33	10	0.0	0.0	9	3	0.0	0.0	3	3	0.3	0.0	2	2	2.5	0.0	58	24	6	0
Alatna	3	1	0.0	–	2	1	0.0	–	2	1	0.0	–	–	–	–	–	–	–	–	–	7	3	0	–
Bettles	8	1	0.0	–	17	13	0.0	0.0	1	0	–	–	–	–	–	–	–	–	–	–	26	14	0	0
District 4	126	54	0.5	0.2	256	93	0.0	0.0	258	98	3.2	0.7	67	58	12.3	1.1	12	12	7.3	0.0	719	315	2,901	851

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Appendix A1.–Page 2 of 2.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total			
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Est. total	CI 95%
Tanana	12	1	0.0	–	34	13	0.5	0.4	34	16	11.0	3.1	8	4	23.3	5.6	12	9	39.8	9.7	100	43	1,200	374
Stevens Village	5	2	0.0	0.0	4	3	0.0	0.0	6	4	11.8	6.8	3	3	46.7	0.0	1	1	28.0	–	19	13	239	88
Birch Creek	2	0	–	–	11	1	15.0	–	3	1	0.0	–	–	–	–	–	–	–	–	–	16	2	0	–
Beaver	6	0	–	–	9	8	0.0	0.0	15	11	4.7	1.9	2	1	8.0	–	–	–	–	–	32	20	107	72
Fort Yukon	36	4	0.5	0.5	123	27	4.4	2.5	40	7	6.3	4.5	17	9	10.2	4.2	9	9	34.8	0.0	225	56	1,561	959
Venetie	14	4	3.8	3.2	48	11	3.5	2.4	13	4	1.0	0.8	4	4	18.3	0.0	1	1	0.0	–	80	24	311	293
Chalkyitsik	11	2	0.0	0.0	16	10	0.0	0.0	2	2	0.0	0.0	–	–	–	–	–	–	–	–	29	14	0	0
District 5	86	13	0.0	0.0	245	73	3.1	1.4	113	45	7.2	1.6	34	21	17.3	2.5	23	20	35.6	5.1	501	172	3,418	1,056
Survey totals	554	166	1.2	0.2	830	275	1.2	0.5	940	333	3.3	0.4	428	364	6.4	0.3	41	37	22.7	2.9	2,793	1,175	10,145	1,445

Note: The number of Chinook salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A2.–Estimated summer chum salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	Total *N*	*n*	Est. total	CI 95%
Hooper Bay	39	17	62.3	14.8	63	16	36.1	16.4	78	21	49.0	11.4	47	42	108.5	4.6	–	–	–	–	227	96	13,629	2,962
Scammon Bay	32	10	3.0	1.8	19	3	83.3	76.5	38	10	104.4	23.4	25	24	154.3	3.5	–	–	–	–	114	47	9,506	2,163
Coastal District	71	27	35.6	8.2	82	19	36.1	16.4	116	31	67.2	10.8	72	66	124.4	3.2	–	–	–	–	341	143	23,135	3,636
Nunam Iqua	5	4	0.0	0.0	6	1	0.0	–	12	4	10.8	8.8	15	12	140.3	16.9	–	–	–	–	38	21	2,651	676
Alakanuk	29	11	42.6	14.7	37	10	16.7	10.6	52	12	24.6	14.5	33	28	109.1	8.1	–	–	–	–	151	61	6,733	1,978
Emmonak	46	14	1.0	0.5	45	23	4.4	2.1	55	23	28.1	10.2	46	41	82.1	5.0	2	2	122.0	0.0	194	103	5,810	1,216
Kotlik	26	12	72.7	17.5	20	6	1.0	0.8	51	17	68.8	21.4	20	19	170.2	5.0	–	–	–	–	117	54	8,822	2,383
District 1	106	41	29.9	5.9	108	40	8.2	4.0	170	56	38.0	8.5	114	100	113.0	3.9	2	2	122.0	0.0	500	239	24,017	3,339
Mountain Village	33	4	0.0	0.0	31	6	0.0	0.0	65	18	60.7	20.5	37	30	90.3	6.9	–	–	–	–	166	58	11,861	4,431
Pitkas Point	5	2	185.5	11.2	4	2	0.0	0.0	13	10	38.0	9.9	7	7	109.1	0.0	–	–	–	–	29	21	2,186	291
St. Marys	38	11	47.5	26.7	19	5	0.0	0.0	51	14	44.6	13.2	35	29	109.0	6.0	1	1	49.0	–	144	60	9,150	2,849
Pilot Station	21	7	0.0	0.0	30	12	0.0	0.0	55	26	47.9	10.7	19	16	69.5	7.5	–	–	–	–	125	61	3,956	1,206
Marshall	36	1	0.0	–	13	5	9.2	6.1	33	9	23.8	9.4	19	17	59.5	6.1	1	0	–	–	102	32	3,986	917
District 2	133	25	42.7	15.9	97	30	2.5	1.7	217	77	50.8	8.8	117	99	88.6	3.2	2	1	49.0	–	566	232	31,139	5,401
Russian Mission	17	2	20.5	5.2	17	5	0.0	0.0	37	11	43.9	9.3	10	10	67.7	0.0	–	–	–	–	81	28	3,967	1,214
Holy Cross	5	1	2.0	–	17	8	0.0	0.0	22	9	2.7	2.0	13	10	13.9	4.0	–	–	–	–	57	28	262	155
Shageluk	10	3	16.7	13.9	8	7	0.0	0.0	7	6	36.7	11.1	1	1	40.0	–	2	2	0.0	0.0	28	19	463	334
District 3	32	6	16.7	13.9	42	20	0.0	0.0	66	26	29.4	5.4	24	21	37.4	2.2	2	2	0.0	0.0	166	75	4,692	1,232
Anvik	4	2	39.5	27.9	6	6	0.0	0.0	14	14	10.6	0.0	8	8	65.4	0.0	1	1	0.0	–	33	31	830	228
Grayling	14	13	4.8	0.5	3	1	0.0	–	24	18	1.6	0.3	10	8	51.3	17.0	–	–	–	–	51	40	618	345
Kaltag	2	0	–	–	10	4	0.0	0.0	33	7	2.0	1.4	6	4	3.5	1.5	–	–	–	–	51	15	67	61
Nulato	16	1	2.0	–	13	4	0.0	0.0	47	16	0.7	0.5	10	8	29.4	10.9	–	–	–	–	86	29	401	280
Koyukuk	6	0	–	–	15	4	10.8	8.6	22	4	10.5	9.5	4	2	24.0	17.0	2	2	225.0	0.0	49	12	4,459	1,208
Galena	24	12	1.4	1.0	58	17	0.0	0.0	67	21	1.0	0.7	9	8	9.0	2.8	2	2	0.0	0.0	160	60	179	122
Ruby	15	5	0.0	0.0	35	7	0.0	0.0	13	3	16.7	14.6	7	6	31.5	5.4	1	1	0.0	–	71	22	681	244
Huslia	18	11	18.2	11.3	48	13	1.2	1.0	16	3	192.7	173.7	8	8	155.4	0.0	3	3	352.7	0.0	93	38	3,241	512
Hughes	5	2	0.0	0.0	16	13	3.8	1.7	10	8	10.0	4.5	2	2	0.0	0.0	1	1	667.0	–	34	26	829	107
Allakaket	11	6	18.3	11.1	33	10	9.4	7.8	9	3	7.3	6.0	3	3	6.7	0.0	2	2	759.0	0.0	58	24	2,116	601
Alatna	3	1	100.0	–	2	1	0.0	–	2	1	20.0	–	–	–	–	–	–	–	–	–	7	3	340	–
Bettles	8	1	0.0	–	17	13	0.0	0.0	1	0	–	–	–	–	–	–	–	–	–	–	26	14	0	0
District 4	126	54	11.6	2.8	256	93	2.1	1.3	258	98	2.8	0.5	67	57	44.9	3.3	12	12	307.8	0.0	719	314	13,759	1,443

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Appendix A2.–Page 2 of 2.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	1	0.0	–	34	13	0.0	0.0	34	16	6.3	3.4	8	4	30.8	21.7	12	9	663.2	214.0	100	43	9,565	5,905
Stevens Village	5	2	0.0	0.0	4	3	0.0	0.0	6	4	0.0	0.0	3	3	16.7	0.0	1	1	0.0	–	19	13	50	0
Birch Creek	2	0	–	–	11	1	0.0	–	3	1	0.0	–	–	–	–	–	–	–	–	–	16	2	0	–
Beaver	6	0	–	–	9	8	0.0	0.0	15	11	0.6	0.3	2	1	0.0	–	–	–	–	–	32	20	12	13
Fort Yukon	36	4	0.0	0.0	123	27	0.0	0.0	40	7	0.0	0.0	17	9	0.0	0.0	9	9	16.6	0.0	225	56	225	0
Venetie	14	4	0.0	0.0	48	11	0.0	0.0	13	4	0.0	0.0	4	4	0.0	0.0	1	1	0.0	–	80	24	0	0
Chalkyitsik	11	2	0.0	0.0	16	10	0.0	0.0	2	2	0.0	0.0	–	–	–	–	–	–	–	–	29	14	0	0
District 5	86	13	0.0	0.0	245	73	0.0	0.0	113	45	3.0	1.6	34	21	8.7	5.1	23	20	352.5	111.7	501	172	9,852	5,780
Survey totals	554	166	27.7	3.9	830	275	5.4	1.7	940	333	33.6	3.2	428	364	85.1	1.6	41	37	302.3	64.2	2,793	1,175	106,595	9,463

Note: The number of summer chum salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A3.–Estimated fall chum salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	39	17	0.0	0.0	63	16	0.3	0.2	78	21	0.6	0.5	47	42	0.5	0.1	–	–	–	–	227	96	91	86
Scammon Bay	32	10	0.0	0.0	19	3	0.0	0.0	38	10	0.0	0.0	25	24	1.9	0.2	–	–	–	–	114	47	58	11
Coastal District	71	27	0.0	0.0	82	19	0.3	0.2	116	31	0.4	0.4	72	66	1.0	0.1	–	–	–	–	341	143	149	86
Nunam Iqua	5	4	0.0	0.0	6	1	0.0	–	12	4	1.8	1.4	15	12	3.8	1.1	–	–	–	–	38	21	93	59
Alakanuk	29	11	3.0	2.0	37	10	0.0	0.0	52	12	0.4	0.4	33	28	6.1	0.9	–	–	–	–	151	61	310	134
Emmonak	46	14	0.0	0.0	45	23	0.0	0.0	55	23	0.8	0.4	46	41	4.9	0.6	2	2	12.0	0.0	194	103	291	69
Kotlik	26	12	2.1	1.1	20	6	0.3	0.3	51	17	3.2	1.2	20	19	24.2	2.1	–	–	–	–	117	54	710	155
District 1	106	41	1.3	0.6	108	40	0.1	0.1	170	56	1.5	0.4	114	100	8.5	0.5	2	2	12.0	0.0	500	239	1,404	221
Mountain Village	33	4	0.0	0.0	31	6	0.0	0.0	65	18	10.1	7.1	37	30	18.4	2.8	–	–	–	–	166	58	2,174	1,546
Pitkas Point	5	2	0.0	0.0	4	2	0.0	0.0	13	10	0.8	0.4	7	7	7.9	0.0	–	–	–	–	29	21	65	10
St. Marys	38	11	1.5	1.0	19	5	0.0	0.0	51	14	2.6	1.5	35	29	16.1	2.3	1	1	53.0	–	144	60	924	271
Pilot Station	21	7	0.0	0.0	30	12	0.0	0.0	55	26	3.3	2.2	19	16	0.5	0.1	–	–	–	–	125	61	194	242
Marshall	36	1	0.0	–	13	5	4.0	3.1	33	9	14.0	6.6	19	17	11.4	1.5	1	0	–	–	102	32	853	323
District 2	133	25	0.9	0.6	97	30	1.1	0.9	217	77	5.3	2.6	117	99	13.0	1.1	2	1	53.0	–	566	232	4,210	1,594
Russian Mission	17	2	10.0	9.4	17	5	15.4	12.9	37	11	7.4	3.6	10	10	19.4	0.0	–	–	–	–	81	28	804	470
Holy Cross	5	1	40.0	–	17	8	0.0	0.0	22	9	5.8	4.3	13	10	50.2	11.1	–	–	–	–	57	28	855	386
Shageluk	10	3	0.0	0.0	8	7	0.0	0.0	7	6	13.3	3.3	1	1	12.0	–	2	2	0.0	0.0	28	19	105	49
District 3	32	6	0.0	0.0	42	20	0.0	0.0	66	26	7.5	2.5	24	21	35.8	6.0	2	2	0.0	0.0	166	75	1,764	593
Anvik	4	2	31.0	21.9	6	6	0.0	0.0	14	14	10.3	0.0	8	8	61.9	0.0	1	1	0.0	–	33	31	763	179
Grayling	14	13	7.9	0.9	3	1	0.0	–	24	18	8.7	3.3	10	8	15.3	2.5	–	–	–	–	51	40	471	169
Kaltag	2	0	–	–	10	4	7.5	5.8	33	7	14.6	5.7	6	4	18.0	6.1	–	–	–	–	51	15	583	466
Nulato	16	1	15.0	–	13	4	15.3	8.1	47	16	29.6	4.2	10	8	85.0	10.0	–	–	–	–	86	29	2,995	613
Koyukuk	6	0	–	–	15	4	0.0	0.0	22	4	0.0	0.0	4	2	42.5	30.1	2	2	240.0	0.0	49	12	5,308	2,139
Galena	24	12	0.0	0.0	58	17	0.0	0.0	67	21	7.4	3.3	9	8	11.6	2.4	2	2	0.0	0.0	160	60	602	446
Ruby	15	5	0.0	0.0	35	7	0.0	0.0	13	3	28.3	20.6	7	6	44.5	5.8	1	1	500.0	–	71	22	2,505	260
Huslia	18	11	0.0	0.0	48	13	0.0	0.0	16	3	0.7	0.6	8	8	22.5	0.0	3	3	139.3	0.0	93	38	722	0
Hughes	5	2	0.0	0.0	16	13	0.0	0.0	10	8	12.1	3.7	2	2	40.5	0.0	1	1	333.0	–	34	26	535	76
Allakaket	11	6	2.5	1.2	33	10	0.0	0.0	9	3	3.7	3.0	3	3	0.0	0.0	2	2	313.0	0.0	58	24	687	61
Alatna	3	1	0.0	–	2	1	0.0	–	2	1	10.0	–	–	–	–	–	–	–	–	–	7	3	20	–
Bettles	8	1	0.0	–	17	13	0.0	0.0	1	0	–	–	–	–	–	–	–	–	–	–	26	14	0	0
District 4	126	54	2.8	1.0	256	93	1.3	0.6	258	98	14.0	1.8	67	57	36.6	2.5	12	12	196.4	0.0	719	314	15,191	2,141

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	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined			
																					Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	1	0.0	–	34	13	0.6	0.3	34	16	20.7	11.3	8	5	58.0	25.3	12	9	2,214.3	399.5	100	44	31,546	11,025
Stevens Village	5	2	0.0	0.0	4	3	0.0	0.0	6	4	0.0	0.0	3	3	183.3	0.0	1	1	290.0	–	19	13	840	0
Birch Creek	2	0	–	–	11	1	0.0	–	3	1	0.0	–	–	–	–	–	–	–	–	–	16	2	0	–
Beaver	6	0	–	–	9	8	0.0	0.0	15	11	0.5	0.2	2	1	5.0	–	–	–	–	–	32	20	21	9
Fort Yukon	36	4	2.5	2.4	123	27	11.1	7.2	40	7	30.0	16.5	17	9	88.9	52.9	9	9	890.9	0.0	225	56	16,453	3,821
Venetie	14	4	87.5	74.0	48	11	54.5	34.2	13	4	37.5	31.2	4	4	325.0	0.0	1	1	0.0	–	80	24	5,340	4,235
Chalkyitsik	11	2	0.0	0.0	16	10	8.4	3.6	2	2	10.0	0.0	–	–	–	–	–	–	–	–	29	14	249	199
District 5	86	13	0.0	0.0	245	73	17.7	8.0	113	45	16.7	7.7	34	22	112.8	27.1	23	20	1516.5	208.5	501	173	54,449	12,132
Survey totals	554	166	1.3	0.3	830	275	6.6	2.8	940	333	6.9	1.1	428	365	22.7	2.2	41	37	932.9	119.9	2,793	1,176	77,167	12,366

Note: The number of fall chum salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A4.–Estimated coho salmon subsistence harvest in surveyed communities, by harvest level, with community and district totals, Yukon Area, 2013.

	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Est.	CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Hooper Bay	39	17	0.2	0.1	63	16	0.0	0.0	78	21	0.7	0.6	47	42	0.3	0.1	–	–	–	–	227	96	73	89
Scammon Bay	32	10	0.2	0.2	19	3	0.0	0.0	38	10	0.0	0.0	25	24	6.9	0.9	–	–	–	–	114	47	214	53
Coastal District	71	27	0.2	0.1	82	19	0.0	0.0	116	31	0.4	0.4	72	66	2.6	0.3	–	–	–	–	341	143	287	103
Nunam Iqua	5	4	0.0	0.0	6	1	0.0	–	12	4	0.8	0.6	15	12	4.1	0.9	–	–	–	–	38	21	83	38
Alakanuk	29	11	0.6	0.4	37	10	0.0	0.0	52	12	0.6	0.5	33	28	3.2	0.7	–	–	–	–	151	61	154	72
Emmonak	46	14	0.0	0.0	45	23	0.1	0.1	55	23	0.7	0.3	46	41	3.4	0.5	2	2	14.0	0.0	194	103	230	61
Kotlik	26	12	0.9	0.7	20	6	1.7	1.1	51	17	1.8	0.6	20	19	13.7	1.8	–	–	–	–	117	54	424	113
District 1	106	41	0.4	0.2	108	40	0.4	0.2	170	56	1.0	0.3	114	100	5.2	0.4	2	2	14.0	0.0	500	239	891	149
Mountain Village	33	4	0.0	0.0	31	6	0.0	0.0	65	18	0.8	0.5	37	30	3.0	0.5	–	–	–	–	166	58	271	124
Pitkas Point	5	2	0.0	0.0	4	2	0.0	0.0	13	10	0.4	0.2	7	7	5.1	0.0	–	–	–	–	29	21	41	5
St. Marys	38	11	0.0	0.0	19	5	0.0	0.0	51	14	0.0	0.0	35	29	2.7	0.5	1	1	5.0	–	144	60	114	38
Pilot Station	21	7	0.0	0.0	30	12	0.0	0.0	55	26	0.3	0.2	19	16	0.3	0.1	–	–	–	–	125	61	22	20
Marshall	36	1	0.0	–	13	5	3.4	2.3	33	9	11.7	5.6	19	17	6.1	1.1	1	0	–	–	102	32	508	239
District 2	133	25	0.0	0.0	97	30	0.9	0.6	217	77	0.4	0.2	117	99	3.1	0.3	2	1	5.0	–	566	232	956	265
Russian Mission	17	2	20.0	18.8	17	5	1.6	1.3	37	11	0.1	0.1	10	10	8.5	0.0	–	–	–	–	81	28	152	10
Holy Cross	5	1	0.0	–	17	8	0.0	0.0	22	9	0.0	0.0	13	10	0.0	0.0	–	–	–	–	57	28	0	0
Shageluk	10	3	21.0	17.6	8	7	0.0	0.0	7	6	0.0	0.0	1	1	9.0	–	2	2	0.0	0.0	28	19	219	368
District 3	32	6	21.0	17.6	42	20	0.0	0.0	66	26	0.1	0.0	24	21	3.9	0.0	2	2	0.0	0.0	166	75	371	350
Anvik	4	2	6.5	4.6	6	6	0.0	0.0	14	14	0.4	0.0	8	8	8.3	0.0	1	1	0.0	–	33	31	97	37
Grayling	14	13	1.1	0.1	3	1	0.0	–	24	18	0.8	0.3	10	8	0.0	0.0	–	–	–	–	51	40	34	14
Kaltag	2	0	–	–	10	4	0.0	0.0	33	7	0.0	0.0	6	5	16.0	4.2	–	–	–	–	51	16	306	170
Nulato	16	1	1.0	–	13	4	0.0	0.0	47	16	0.1	0.1	10	8	9.9	4.2	–	–	–	–	86	29	125	105
Koyukuk	6	0	–	–	15	4	0.0	0.0	22	4	0.0	0.0	4	2	0.0	0.0	2	2	200.0	0.0	49	12	3,267	0
Galena	24	12	0.0	0.0	58	17	0.0	0.0	67	21	0.3	0.2	9	8	16.8	4.8	2	2	0.0	0.0	160	60	170	90
Ruby	15	5	0.0	0.0	35	7	0.0	0.0	13	3	1.7	1.5	7	6	1.7	0.4	1	1	100.0	–	71	22	345	18
Huslia	18	11	0.0	0.0	48	13	0.0	0.0	16	3	0.0	0.0	8	8	8.8	0.0	3	3	71.0	0.0	93	38	342	0
Hughes	5	2	0.0	0.0	16	13	0.0	0.0	10	8	1.8	0.8	2	2	0.0	0.0	1	1	0.0	–	34	26	18	16
Allakaket	11	6	1.7	1.1	33	10	0.0	0.0	9	3	1.3	0.5	3	3	0.0	0.0	2	2	103.0	0.0	58	24	236	27
Alatna	3	1	0.0	–	2	1	0.0	–	2	1	0.0	–	–	–	–	–	–	–	–	–	7	3	0	–
Bettles	8	1	0.0	–	17	13	0.0	0.0	1	0	–	–	–	–	–	–	–	–	–	–	26	14	0	0
District 4	126	54	0.6	0.2	256	93	0.0	0.0	258	98	0.4	0.1	67	58	7.4	1.0	12	12	76.6	0.0	719	315	4,940	214

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	Unknown				Does not harvest salmon				Light harvester				Medium harvester				Heavy harvester				Combined Total		Combined Est.	Combined CI
Community	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	Mean	SE	*N*	*n*	total	95%
Tanana	12	1	0.0	–	34	13	0.0	0.0	34	16	0.0	0.0	8	4	0.5	0.4	12	9	82.9	26.8	100	43	1,135	738
Stevens Village	5	2	0.0	0.0	4	3	0.0	0.0	6	4	0.0	0.0	3	3	0.0	0.0	1	1	0.0	–	19	13	0	0
Birch Creek	2	0	–	–	11	1	0.0	–	3	1	0.0	–	–	–	–	–	–	–	–	–	16	2	0	–
Beaver	6	0	–	–	9	8	0.0	0.0	15	11	0.0	0.0	2	1	0.0	–	–	–	–	–	32	20	0	0
Fort Yukon	36	4	1.5	1.4	123	27	0.0	0.0	40	7	0.0	0.0	17	9	0.2	0.2	9	9	0.1	0.0	225	56	7	8
Venetie	14	4	0.0	0.0	48	11	0.0	0.0	13	4	0.0	0.0	4	4	1.3	0.0	1	1	0.0	–	80	24	6	0
Chalkyitsik	11	2	0.0	0.0	16	10	0.0	0.0	2	2	0.0	0.0	–	–	–	–	–	–	–	–	29	14	0	0
District 5	86	13	0.0	0.0	245	73	0.0	0.0	113	45	0.0	0.0	34	21	0.4	0.1	23	20	43.3	14.0	501	172	1,148	722
Survey totals	554	166	0.9	0.5	830	275	0.1	0.1	940	333	0.5	0.1	428	365	4.1	0.2	41	37	48.7	8.0	2,793	1,176	8,593	884

Note: The number of coho salmon harvested was estimated using the total number of households (*N*), the number of households contacted (*n*), the average number of salmon harvested by households (Mean), standard error (SE), and includes 95% confidence interval (CI 95%). Dashes indicate indefinable values.

Appendix A5.–Estimated number of salmon provided to communities for subsistence use by test fishery programs, Yukon Area, 2013.

Yukon River test fishery sites	Community where fish were distributed	Chinook salmon	Summer chum salmon	Fall chum salmon	Coho salmon	Pink salmon	Total salmon
Lower Yukon test fish gillnet (LYTF) [a]	Alakanuk	122	519	18	13	–	672
	Emmonak	326	1,439	1,874	287	–	3,926
	Kotlik	315	747	377	33	–	1,472
	St. Marys	11	17	85	10	0	123
LYTF project subtotal:		774	2,722	2,354	343	0	6,193
Mesh size study	Alakanuk	20	268	0	0	–	288
	Emmonak	3	960	0	0	–	963
	Kotlik	0	567	0	0	–	567
Mesh size study subtotal		23	1,795	0	0	0	1,818
Pilot Station sonar test fish drift gillnet	Pilot Station	101	1,343	583	114	0	2,141
Eagle Sonar test fish drift gillnet	Eagle [b]	3	0	0	0	0	3
Tanana River Manley sonar	Manley [b]	0	0	80	28	–	108
	Minto [b]	0	0	25	9	–	34
	Other [b]	0	0	5	6	–	11
Manley sonar subtotal [b]		0	0	110	43	0	153
Test fishery totals [c]		901	5,860	3,047	500	–	10,308

[a] Includes both set and drift gillnet test fishery catches. No donations of pink salmon were reported from projects.

[b] Communities from permit areas that were not surveyed.

[c] Totals do not include 750 summer chum salmon donated to Galena by Kwik'pak Fisheries LLC.

Appendix A6.–Months when households reported harvesting small whitefish species, 2013.

	Month												
District	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Coastal	3	3	2	2	1	5	5	6	17	5	6	8	63
District Y1	18	15	7	6	4	1	1	2	51	40	24	22	191
District Y2	2	2	1	1				1	4	3	3	3	20
District Y3													0
District Y4					2				3	3			8
District Y5	1	1	1	1	3	5	6	2	2	1	1	1	25
Households	24	21	11	10	10	11	12	11	77	52	34	34	307

Note: Based on responses from 130 surveyed households.

APPENDIX B: HISTORICAL INFORMATION

Appendix B1.–Chinook salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Hooper Bay	722	1,042	157	376	430	388	183	584	252	1,090	1,210	545	499
Scammon Bay	1,128	996	691	507	768	1,104	722	716	517	1,014	332	818	815
Coastal District total	1,850	2,038	848	883	1,198	1,492	905	1,300	769	2,104	1,542	1,363	1,314
Nunam Iqua	925	647	338	371	907	163	200	404	250	195	12	638	242
Alakanuk	1,707	1,317	860	690	1,257	1,238	634	944	1,464	1,081	275	1,166	1,072
Emmonak	2,763	2,768	1,730	2,311	2,326	2,696	1,634	2,194	2,172	1,864	553	2,380	2,112
Kotlik	937	1,148	2,130	1,750	1,569	2,066	1,657	2,314	2,369	1,173	794	1,507	1,916
District 1 subtotal	6,332	5,880	5,058	5,122	6,059	6,163	4,125	5,856	6,255	4,313	1,634	5,690	5,342
Mountain Village	2,174	2,362	2,383	1,659	2,077	1,645	1,482	1,601	2,063	1,789	266	2,131	1,716
Pitkas Point	633	609	618	274	320	544	265	580	246	261	37	491	379
St. Marys	1,916	2,357	2,693	2,233	3,573	1,756	1,929	2,800	1,734	2,344	215	2,554	2,113
Pilot Station	2,886	2,406	1,658	1,976	2,028	1,597	1,258	1,585	1,340	1,078	258	2,191	1,372
Marshall	2,059	1,990	1,804	1,897	2,555	3,284	1,201	2,110	2,686	1,409	328	2,061	2,138
District 2 subtotal	9,668	9,724	9,156	8,039	10,553	8,826	6,135	8,676	8,069	6,881	1,104	9,428	7,717
Russian Mission	2,057	2,337	1,894	1,851	1,301	2,949	978	924	1,550	1,711	236	1,888	1,622
Holy Cross	2,395	1,993	2,817	3,165	2,902	2,509	1,745	3,098	2,231	576	204	2,654	2,032
Shageluk	550	418	420	358	448	397	201	277	353	75	4	439	261
District 3 subtotal	5,002	4,748	5,131	5,374	4,651	5,855	2,924	4,299	4,134	2,362	444	4,981	3,915
Lower Yukon River total	21,002	20,352	19,345	18,535	21,263	20,844	13,184	18,831	18,458	13,556	3,182	20,099	16,975
Anvik	1,286	1,588	1,206	958	1,321	1,433	796	1,069	1,052	435	121	1,272	957
Grayling	1,613	1,869	1,878	1,702	1,500	1,761	1,133	2,122	1,374	1,081	226	1,712	1,494
Kaltag	1,838	1,656	3,367	2,833	1,456	2,403	1,970	3,191	2,488	1,346	348	2,230	2,280
Nulato	2,531	5,199	2,749	2,707	2,431	1,250	1,551	2,989	1,538	1,955	602	3,123	1,857
Koyukuk	860	400	396	835	811	513	982	867	1,349	614	898	660	865
Galena	3,112	3,296	2,864	2,380	2,511	2,232	1,370	1,357	1,434	742	275	2,833	1,427
Ruby	631	1,620	1,193	304	1,594	637	542	1,102	482	1,316	357	1,068	816
District 4 subtotal	11,871	15,628	13,653	11,719	11,624	10,229	8,344	12,697	9,717	7,489	2,827	12,899	9,695
Huslia	469	285	207	258	146	255	969	65	121	165	62	273	315
Hughes	113	291	33	8	8	61	101	63	10	0	6	91	47
Allakaket	306	65	68	23	53	58	90	63	42	5	6	103	52
Alatna	12	0	0	14	0	16	10	0	3	0	0	5	6
Bettles	0	0	3	0	0	0	0	0	0	3	0	1	1
Koyukuk River subtotal	900	641	311	303	207	390	1,170	191	176	173	74	472	420
District 4 total (incl. Koyukuk R.)	12,771	16,269	13,964	12,022	11,831	10,619	9,514	12,888	9,893	7,662	2,901	13,371	10,115

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Tanana	5,332	2,689	3,729	3,794	5,498	3,981	2,950	3,215	2,936	2,100	1,200	4,208	3,036
Rampart [a]	1,411	287	411	429	250	136	528	262	201	190	35	558	263
Fairbanks [b]	1,932	1,997	2,584	2,184	2,510	1,898	1,509	1,670	2,186	558	610	2,241	1,564
Stevens Village	1,121	2,394	1,570	1,245	610	753	405	469	415	330	239	1,388	474
Birch Creek	78	82	131	174	113	32	15	73	49	0	0	116	34
Beaver	1,156	858	957	830	1,244	546	516	198	356	71	107	1,009	337
Fort Yukon	4,004	4,430	3,591	3,144	4,076	1,991	846	1,683	2,472	2,141	1,561	3,849	1,827
Circle	895	565	1,283	694	1,057	519	372	324	297	280	157	899	358
Central	144	83	175	130	334	48	167	90	66	66	21	173	87
Eagle	2,081	1,512	2,566	2,303	1,999	1,068	446	867	728	167	175	2,092	655
Other [c]	862	357	315	330	472	362	541	779	777	477	125	467	587
District 5 subtotal (excluding Chandalar and Black Rivers)	19,016	15,254	17,312	15,257	18,163	11,334	8,295	9,630	10,483	6,380	4,230	17,000	9,224
Venetie	125	352	59	667	1,002	292	622	767	10	86	311	441	355
Chalkyitsik	50	60	53	0	0	0	0	0	0	0	0	33	0
Chandalar/Black River subtotal	175	412	112	667	1,002	292	622	767	10	86	311	474	355
District 5 total	19,191	15,666	17,424	15,924	19,165	11,626	8,917	10,397	10,493	6,466	4,541	17,474	9,580
Manley	213	239	289	361	333	106	345	337	287	174	165	287	250
Minto	317	35	35	31	82	12	0	43	61	99	60	100	43
Nenana	1,193	633	533	712	893	322	458	658	681	296	87	793	483
Fairbanks [d]	392	449	971	125	409	108	396	91	330	58	49	469	197
Other [c]	30	32	0	0	0	57	86	14	8	0	6	12	33
District 6 Tanana R. total	2,145	1,388	1,828	1,229	1,717	605	1,285	1,143	1,367	627	367	1,661	1,005
Upper Yukon River total	34,107	33,323	33,216	29,175	32,713	22,850	19,716	24,428	21,753	14,755	7,809	32,507	20,700
Alaska, Yukon River total [e]	55,109	53,675	52,561	47,710	53,976	43,694	32,900	43,259	40,211	28,311	10,991	52,606	37,675
Alaska, Yukon Area total	56,959	55,713	53,409	48,593	55,174	45,186	33,805	44,559	40,980	30,415	12,533	53,970	38,989
Not included in communities or totals above													
Personal use (District 6) [f]	204	201	138	89	136	126	127	162	89	71	42	154	115

[a] Rampart area harvest as reported from subsistence fishing permits. Subsistence surveys were conducted in 2003 and permits were used from 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 or District 6 but did not reside in the communities listed.

[d] Harvest by Fairbanks subsistence permit holders who fished in the Tanana River.

[e] Does not include the Coastal District for use in U.S./Canada negotiations.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks.

Appendix B2.–Summer chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Hooper Bay	10,658	3,242	9,771	19,468	12,234	12,007	9,195	17,020	13,460	15,799	13,629	11,075	13,496
Scammon Bay	3,310	5,020	4,586	4,703	3,887	6,113	3,602	5,405	4,845	7,442	9,506	4,301	5,481
Coastal District total	13,968	8,262	14,357	24,171	16,121	18,120	12,797	22,425	18,305	23,241	23,135	15,376	18,978
Nunam Iqua	2,561	2,698	2,794	2,903	2,325	1,949	2,280	2,267	2,077	1,977	2,651	2,656	2,110
Alakanuk	5,287	6,555	5,687	7,790	7,611	6,881	5,152	7,722	7,447	9,012	7,520	6,586	7,243
Emmonak	7,644	8,618	12,594	11,899	9,256	9,646	9,038	10,918	12,468	15,829	8,209	10,002	11,580
Kotlik	4,209	2,749	6,620	5,289	5,017	4,291	7,528	4,265	6,598	8,552	10,136	4,777	6,247
District 1 subtotal	19,701	20,620	27,695	27,881	24,209	22,767	23,998	25,172	28,590	35,370	28,516	24,021	27,179
Mountain Village	6,497	10,676	8,861	13,119	8,104	7,559	7,204	7,071	9,355	9,031	11,861	9,451	8,044
Pitkas Point	800	717	1,023	680	515	1,246	994	633	585	1,153	2,186	747	922
St. Marys	4,521	6,994	6,877	7,394	8,107	6,451	5,831	7,443	6,760	10,763	9,167	6,779	7,450
Pilot Station	4,163	5,779	4,333	6,070	3,711	6,012	4,888	6,196	4,182	5,716	5,299	4,811	5,399
Marshall	792	1,765	3,183	4,392	3,070	3,023	2,172	2,395	3,810	5,903	3,986	2,640	3,461
District 2 subtotal	16,773	25,931	24,277	31,655	23,507	24,291	21,089	23,738	24,692	32,566	32,499	24,429	25,275
Russian Mission	171	884	925	1,328	759	2,400	849	528	1,225	2,508	3,967	813	1,502
Holy Cross	214	276	760	825	320	441	194	463	363	1,147	262	479	522
Shageluk	5,473	1,798	4,081	1,381	977	130	103	350	1,145	5,035	463	2,742	1,353
District 3 subtotal	5,858	2,958	5,766	3,534	2,056	2,971	1,146	1,341	2,733	8,690	4,692	4,034	3,376
Lower Yukon River total	42,332	49,509	57,738	63,070	49,772	50,029	46,233	50,251	56,015	76,626	65,707	52,484	55,831
Anvik	844	248	529	387	5,250	340	277	451	220	1,371	830	1,452	532
Grayling	1,072	1,129	783	644	641	660	1,429	1,612	838	2,616	618	854	1,431
Kaltag	1,028	213	680	159	109	916	50	102	163	186	67	438	283
Nulato	180	198	634	838	356	468	133	416	246	254	401	441	303
Koyukuk	1,339	329	537	394	995	1,104	1,378	352	890	828	4,459	719	910
Galena	289	782	1,013	1,205	571	758	1,718	1,702	3,414	718	179	772	1,662
Ruby	876	2,010	967	1,714	416	655	603	1,971	775	3,891	681	1,197	1,579
District 4 subtotal	5,628	4,909	5,143	5,341	8,338	4,901	5,588	6,606	6,546	9,864	7,235	5,872	6,701
Huslia	6,187	3,844	2,433	1,122	3,243	4,377	2,554	1,349	3,166	7,306	3,241	3,366	3,750
Hughes	1,265	3,823	2,230	3,254	1,213	944	1,723	878	954	428	829	2,357	985
Allakaket	4,383	2,367	2,535	5,170	3,451	3,229	4,924	2,864	2,368	3,850	2,116	3,581	3,447
Alatna	50	16	5	110	11	66	163	23	132	100	340	38	97
Bettles	0	0	4	0	0	0	6	0	0	7	0	1	3
Koyukuk River subtotal	11,885	10,050	7,207	9,656	7,918	8,616	9,370	5,114	6,620	11,691	6,526	9,343	8,282
District 4 total (incl. Koyukuk R.)	17,513	14,959	12,350	14,997	16,256	13,517	14,958	11,720	13,166	21,555	13,761	15,215	14,983

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Tanana	3,075	1,490	4,832	5,474	5,229	2,877	4,665	1,856	4,381	4,333	9,565	4,020	3,622
Rampart [a]	9	103	315	135	25	27	112	161	67	71	5	117	88
Fairbanks [b]	89	280	780	1,341	564	119	44	427	688	172	1,350	611	290
Stevens Village	0	108	442	972	254	163	6	28	43	188	50	355	86
Beaver	7	2	68	117	41	27	22	22	393	27	12	47	98
Fort Yukon	2,176	1,187	67	2,165	2,365	230	275	722	1,297	0	225	1,592	505
Circle	85	52	3	58	200	5	0	37	48	0	66	80	18
Central	0	0	5	2	0	0	2	0	0	0	0	1	0
Eagle	104	171	235	974	15	14	0	25	2	0	50	300	8
Other [c]	0	3	53	117	81	25	29	144	790	101	94	51	218
District 5 subtotal (excluding Chandalar and Black Rivers)	5,545	3,396	6,800	11,355	8,774	3,487	5,155	3,422	7,709	4,892	11,417	7,174	4,933
Venetie	0	15	0	475	107	50	143	0	0	0	0	119	39
Chalkyitsik	0	0	0	0	0	0	0	133	0	0	0	0	27
Chandalar/Black River subtotal	0	15	0	475	107	50	143	133	0	0	0	119	65
District 5 total	5,545	3,411	6,800	11,830	8,881	3,537	5,298	3,555	7,709	4,892	11,417	7,293	4,998
Manley	65	296	163	89	140	144	367	102	142	58	45	151	163
Minto	625	7	21	460	82	9	1	8	27	64	258	239	22
Nenana	2,193	1,171	1,771	388	1,419	753	506	83	471	370	642	1,388	437
Fairbanks [d]	31	308	45	73	255	94	372	183	185	114	143	142	190
Other [c]	0	11	14	0	0	311	7	46	0	72	6	5	87
District 6 Tanana R. total	2,914	1,793	2,014	1,010	1,896	1,311	1,253	422	825	678	1,094	1,925	898
Upper Yukon River total	25,972	20,163	21,164	27,837	27,033	18,365	21,509	15,697	21,700	27,125	26,272	24,434	20,879
Alaska, Yukon River total [e]	68,304	69,672	78,902	90,907	76,805	68,394	67,742	65,948	77,715	103,751	91,979	76,918	76,710
Alaska, Yukon Area total	82,272	77,934	93,259	115,078	92,926	86,514	80,539	88,373	96,020	126,992	115,114	92,294	95,688
Not included in communities or totals above													
Personal Use (District 6) [f]	148	231	152	262	184	138	308	319	439	321	138	195	305

[a] Rampart area harvest as reported from subsistence fishing permits. Subsistence surveys were conducted in 2003 and permits were used from 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 or District 6 but did not reside in the communities listed.

[d] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

[e] Does not include the Coastal District for use in U.S./Canada negotiations.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks.

Appendix B3.–Fall chum salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Hooper Bay	40	264	1	146	64	329	41	116	267	1	91	103	151
Scammon Bay	106	56	69	41	170	57	117	70	48	10	58	88	60
Coastal District total	146	320	70	187	234	386	158	186	315	11	149	191	211
Nunam Iqua	127	49	310	735	152	59	41	143	51	210	93	275	101
Alakanuk	348	953	627	624	1,348	423	116	860	881	449	328	780	546
Emmonak	1,257	785	1,436	2,056	2,360	1,670	1,589	1,718	1,540	5,890	2,165	1,579	2,481
Kotlik	407	280	516	487	530	671	171	481	962	1,073	1,087	444	672
District 1 subtotal	2,139	2,067	2,889	3,902	4,390	2,823	1,917	3,202	3,434	7,622	3,673	3,077	3,800
Mountain Village	873	918	1,290	2,398	1,073	926	926	133	800	685	2,174	1,310	694
Pitkas Point	49	0	6	5	44	101	76	10	30	9	65	21	45
St. Marys	762	104	490	417	825	830	106	387	611	1,423	1,009	520	671
Pilot Station	823	1,108	838	785	741	917	265	833	575	1,031	777	859	724
Marshall	394	291	633	410	789	748	190	56	562	184	853	503	348
District 2 subtotal	2,901	2,421	3,257	4,015	3,472	3,522	1,563	1,419	2,578	3,332	4,878	3,213	2,483
Russian Mission	615	172	667	251	530	578	205	104	11	282	804	447	236
Holy Cross	9	76	582	224	248	920	627	21	94	339	855	228	400
Shageluk	114	50	55	5	147	323	105	1,200	249	16	105	74	379
District 3 subtotal	738	298	1,304	480	925	1,821	937	1,325	354	637	1,764	749	1,015
Lower Yukon River total	5,778	4,786	7,450	8,397	8,787	8,166	4,417	5,946	6,366	11,591	10,315	7,040	7,297
Anvik	179	398	497	118	429	317	176	169	202	569	763	324	287
Grayling	441	267	1,009	691	317	1,012	490	202	1,152	804	471	545	732
Kaltag	725	687	1,089	823	910	620	200	658	196	2,830	583	847	901
Nulato	1,341	1,246	421	751	1,345	729	552	1,049	652	2,729	2,995	1,021	1,142
Koyukuk	835	344	803	1,147	927	1,177	578	792	1,388	1,331	5,308	811	1,053
Galena	1,510	1,587	2,695	1,632	1,471	1,364	4,306	1,968	2,739	2,947	602	1,779	2,665
Ruby	2,331	1,064	559	227	1,959	657	134	1,026	592	4,408	2,505	1,228	1,363
District 4 subtotal	7,362	5,593	7,073	5,389	7,358	5,876	6,436	5,864	6,921	15,618	13,227	6,555	8,143
Huslia	1,786	1,139	1,614	313	272	64	86	403	183	1,909	722	1,025	529
Hughes	497	97	111	240	0	127	288	0	64	2	535	189	96
Allakaket	105	968	557	393	939	1,345	572	521	92	508	687	592	608
Alatna	0	0	0	0	7	0	0	0	0	18	20	1	4
Bettles	0	0	50	0	0	0	0	0	0	0	0	10	0
Koyukuk River subtotal	2,388	2,204	2,332	946	1,218	1,536	946	924	339	2,437	1,964	1,818	1,236
District 4 total (incl. Koyukuk R.)	9,750	7,797	9,405	6,335	8,576	7,412	7,382	6,788	7,260	18,055	15,191	8,373	9,379

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Tanana	14,308	23,118	20,545	23,167	21,596	17,478	19,595	14,984	21,728	20,465	31,546	20,547	18,850
Rampart [a]	365	0	358	250	250	1,000	1,000	735	340	190	100	245	653
Fairbanks [b]	105	43	1,682	5,269	2,126	659	229	822	1,696	793	1,160	1,845	840
Stevens Village	857	1,080	246	50	199	643	770	2,706	911	277	840	486	1,061
Beaver	192	48	179	0	354	13	120	37	122	174	21	155	93
Fort Yukon	7,963	7,302	8,088	5,178	8,264	14,252	2,829	6,006	7,188	12,659	16,453	7,359	8,587
Circle	499	1,022	918	664	1,286	3,198	110	927	299	161	1,397	878	939
Central	0	0	36	0	0	0	0	0	0	0	0	7	0
Eagle	2,871	5,482	17,356	16,801	18,676	15,269	10,941	15,008	17,455	18,731	18,871	12,237	15,481
Other [c]	0	13	117	44	46	3,183	71	120	208	443	121	44	805
District 5 subtotal (excluding Chandalar and Black Rivers)	27,160	38,108	49,525	51,423	52,797	55,695	35,665	41,345	49,947	53,893	70,509	43,803	47,309
Venetie	770	2,083	1,801	520	721	1,563	2,373	2,989	1,938	295	5,340	1,179	1,832
Chalkyitsik	340	479	337	215	213	0	45	0	0	162	249	317	41
Chandalar/Black River subtotal	1,110	2,562	2,138	735	934	1,563	2,418	2,989	1,938	457	5,589	1,496	1,873
District 5 total	28,270	40,670	51,663	52,158	53,731	57,258	38,083	44,334	51,885	54,350	76,098	45,298	49,182
Manley	1,303	1,504	2,985	3,374	3,419	2,490	4,126	2,696	2,333	2,164	1,539	2,517	2,762
Minto	675	0	600	242	155	28	0	70	1,500	2	593	334	320
Nenana	7,802	5,367	10,594	10,530	21,863	6,585	7,623	6,802	5,268	8,665	3,112	11,231	6,989
Fairbanks [d]	1,949	1,024	6,691	1,311	3,325	340	3,460	678	4,317	3,876	5,651	2,860	2,534
Other [c]	1,257	1,058	2,076	1,468	1,131	6,692	870	1,145	958	595	736	1,398	2,052
District 6 Tanana R. total	12,986	8,953	22,946	16,925	29,893	16,135	16,079	11,391	14,376	15,302	11,631	18,341	14,657
Upper Yukon River total	51,006	57,420	84,014	75,418	92,200	80,805	61,544	62,513	73,521	87,707	102,920	72,012	73,218
Alaska, Yukon River total [e]	56,784	62,206	91,464	83,815	100,987	88,971	65,961	68,459	79,887	99,298	113,235	79,051	80,515
Alaska, Yukon Area total	56,930	62,526	91,534	84,002	101,221	89,357	66,119	68,645	80,202	99,309	113,384	79,243	80,726
Not included in communities or totals above													
Personal Use (District 6) [f]	394	230	133	333	173	181	78	3,209	347	410	383	253	845

[a] Rampart area harvest as reported from subsistence fishing permits. Subsistence surveys were conducted 2001–2003 and permits were used 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 or District 6 but did not reside in the communities listed.

[d] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

[e] Does not include the Coastal District for use in U.S./Canada negotiations.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks.

Appendix B4.–Coho salmon subsistence harvest totals by fishing district and community of residence, as estimated from postseason survey, returned permits and test fishery projects, and personal use harvest total for District 6, Yukon Area, 2003–2013.

Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Hooper Bay	244	9	0	175	26	66	24	45	0	7	73	91	28
Scammon Bay	48	54	279	160	84	50	222	79	55	86	214	125	98
Coastal District total	292	63	279	335	110	116	246	124	55	93	287	216	127
Nunam Iqua	117	79	241	392	92	24	71	73	23	18	83	184	42
Alakanuk	193	207	322	101	857	157	194	449	431	252	167	336	297
Emmonak	547	296	191	450	1,032	717	401	362	472	2,660	517	503	922
Kotlik	403	593	222	234	284	313	181	238	201	420	457	347	271
District 1 subtotal	1,260	1,175	976	1,177	2,265	1,211	847	1,122	1,127	3,350	1,224	1,371	1,531
Mountain Village	745	521	246	1,856	1,027	518	413	127	261	256	271	879	315
Pitkas Point	130	0	30	16	38	130	45	116	37	53	41	43	76
St. Marys	276	258	252	171	97	591	151	92	230	141	124	211	241
Pilot Station	371	296	241	225	263	268	203	189	145	329	136	279	227
Marshall	64	425	341	191	922	490	245	33	150	567	508	389	297
District 2 subtotal	1,586	1,500	1,110	2,459	2,347	1,997	1,057	557	823	1,346	1,080	1,800	1,156
Russian Mission	178	151	133	19	259	372	96	300	0	319	152	148	217
Holy Cross	498	27	84	16	213	38	120	0	0	237	0	168	79
Shageluk	35	106	0	48	267	0	105	53	36	0	219	91	39
District 3 subtotal	711	284	217	83	739	410	321	353	36	556	371	407	335
Lower Yukon River total	3,557	2,959	2,303	3,719	5,351	3,618	2,225	2,032	1,986	5,252	2,675	3,578	3,023
Anvik	12	288	406	0	807	40	137	28	19	214	97	303	88
Grayling	559	233	234	224	271	25	318	132	119	26	34	304	124
Kaltag	463	138	307	106	204	45	40	0	258	928	306	244	254
Nulato	928	203	60	214	130	195	171	242	118	41	125	307	153
Koyukuk	1,155	166	37	330	189	84	198	254	137	62	3,267	375	147
Galena	1,507	1,307	607	137	425	558	2,353	549	1,013	276	170	797	950
Ruby	648	1,540	361	11	168	291	314	148	312	1,806	345	546	574
District 4 subtotal	5,272	3,875	2,012	1,022	2,194	1,238	3,531	1,353	1,976	3,353	4,344	2,875	2,290
Huslia	375	764	734	105	592	100	323	289	70	165	342	514	189
Hughes	20	110	20	150	100	0	89	0	13	0	18	80	20
Allakaket	99	17	205	25	66	152	43	88	13	38	236	82	67
Alatna	7	0	0	0	0	0	0	0	0	0	0	1	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0
Koyukuk River subtotal	501	891	959	280	758	252	455	377	96	203	596	678	277
District 4 total (incl. Koyukuk R.)	5,773	4,766	2,971	1,302	2,952	1,490	3,986	1,730	2,072	3,556	4,940	3,553	2,567

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2003–2007 Average	2008–2012 Average
Tanana	3,480	1,049	1,616	3,619	2,369	1,511	2,373	2,314	312	3,060	1,135	2,427	1,914
Rampart [a]	0	0	10	0	50	0	0	24	0	0	0	12	5
Fairbanks [b]	120	91	10	79	26	7	13	2	2	0	0	65	5
Stevens Village	0	100	0	0	0	0	90	428	0	0	0	20	104
Beaver	0	0	0	0	354	6	0	1	0	2	0	71	2
Fort Yukon	0	19	394	35	567	1,618	2	244	1,040	4	7	203	582
Circle	244	100	100	22	0	0	13	164	0	5	150	93	36
Central	0	0	1	0	0	0	0	0	0	0	0	0	0
Eagle	0	14	15	0	0	0	0	1	1	0	0	6	0
Other [c]	25	0	13	0	0	61	7	0	0	21	0	8	18
District 5 subtotal (excluding Chandalar and Black Rivers)	3,869	1,373	2,159	3,755	3,366	3,203	2,498	3,178	1,355	3,092	1,292	2,904	2,665
Venetie	11	5	0	24	0	0	0	159	34	0	6	8	39
Chalkyitsik	7	45	0	0	0	0	0	267	0	0	0	10	53
Chandalar/Black River subtotal	18	50	0	24	0	0	0	426	34	0	6	18	92
District 5 Total	3,887	1,423	2,159	3,779	3,366	3,203	2,498	3,604	1,389	3,092	1,298	2,923	2,757
Manley	886	1,384	2,510	1,671	1,126	1,901	2,308	1,832	1,482	1,374	447	1,515	1,779
Minto	423	5	0	14	155	0	0	0	0	0	266	119	0
Nenana	5,431	6,494	12,395	7,032	4,487	2,775	3,475	2,313	3,304	5,904	1,762	7,168	3,554
Fairbanks [d]	1,049	1,435	3,032	745	609	230	577	212	1,109	1,502	2,576	1,374	726
Other [c]	2,574	2,266	1,601	1,109	1,468	3,522	691	1,198	947	760	206	1,804	1,424
District 6 Tanana River total	10,363	11,584	19,538	10,571	7,845	8,428	7,051	5,555	6,842	9,540	5,257	11,980	7,483
Upper Yukon Area total	20,023	17,773	24,668	15,652	14,163	13,121	13,535	10,889	10,303	16,188	11,495	18,456	12,807
Alaska, Yukon River total [e]	23,580	20,732	26,971	19,371	19,514	16,739	15,760	12,921	12,289	21,440	14,170	22,034	15,830
Alaska, Yukon Area total	23,872	20,795	27,250	19,706	19,624	16,855	16,006	13,045	12,344	21,533	14,457	22,249	15,957
Not included in communities or totals above													
Personal use (District 6) [f]	549	233	107	279	135	50	70	1,062	232	100	109	261	303

[a] Rampart area harvest as reported from subsistence fishing permits. Subsistence surveys were conducted in 2003 and permits were used from 2004 to present.

[b] Harvests by Fairbanks subsistence permit holders who fished in District 5 near the Yukon River bridge crossing.

[c] Other permit holders who fished in District 5 or District 6 but did not reside in the communities listed.

[d] Harvests by Fairbanks subsistence permit holders who fished in the Tanana River.

[e] Does not include the Coastal District for use in U.S./Canada negotiations.

[f] Harvest from the personal use fishing area on the Tanana River near Fairbanks.

Appendix B5.–Subsistence fish harvests taken under authority of a permit in the Rampart Area and Yukon River Bridge Area of District 5, Yukon Area, 2003–2013.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest										
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Yukon River Rampart Village Area subsistence salmon fishery [a]														
2004	14	11	9	832	249	0	0	0	0	0	0	0	0
2005	22	19	17	1,721	663	2,023	10	22	0	21	0	2	4
2006	19	19	16	1,083	647	318	0	177	0	6	11	10	30
2007	23	19	15	1,744	495	2,050	50	75	0	11	20	3	0
2008	18	18	15	1,049	43	1,000	0	20	0	0	0	0	0
2009	25	24	20	1,404	159	1,070	4	147	0	0	10	0	8
2010	28	27	22	1,344	304	1,235	24	162	1	5	20	0	1
2011	29	29	24	1,586	429	768	1	76	1	0	11	0	0
2012	32	31	28	575	197	1,161	21	345	2	3	5	11	0
2013	23	22	18	474	579	300	0	27	2	0	0	0	5
2004–2007 Average	20	17	14	1,345	514	1,098	15	69	0	10	8	4	9
2008–2012 Average	26	26	22	1,192	226	1,047	10	150	1	2	9	2	2
Yukon River "Bridge Area" subsistence fishery [b]														
2003	86	80	62	2,670	89	104	145	557	62	32	47	7	0
2004	69	67	51	2,032	164	43	91	56	6	15	26	0	0
2005	76	72	57	1,847	643	17	9	52	31	11	33	4	0
2006	68	66	53	1,952	1,063	4,855	79	69	10	6	6	0	4
2007	85	80	51	1,707	177	626	26	61	26	25	43	0	0
2008	73	69	45	1,456	130	705	7	192	71	61	57	0	0
2009	68	66	38	1,248	28	996	106	60	9	37	60	0	0
2010	85	81	43	1,300	448	422	2	67	9	0	12	0	0
2011	74	73	43	1,552	1,139	1,828	1	315	5	12	36	20	1
2012	63	61	26	629	147	259	0	75	35	3	19	0	0
2013	49	48	22	379	1,020	1,055	0	62	5	4	16	0	0
2003–2007 Average	77	73	55	2,042	427	1,129	70	159	27	18	31	2	1
2008–2012 Average	73	70	39	1,237	378	842	23	142	26	23	37	4	0

Note: Permit requirement for the Rampart Village area was established in 2004.

[a] That portion of the Yukon River drainage from Garnett Island to Hess Creek.

[b] That portion of the Yukon River drainage from Hess Creek to Dall River.

Appendix B6.–Subsistence fish harvests taken under authority of a permit in the Circle-Eagle Area of District 5, Yukon Area, 2003–2013.

Upper Yukon River Circle-Eagle Area subsistence salmon fishery [a, b]														
					Reported harvest									
Year		Number of permits issued	Number of permits returned	Number reporting harvest	Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
2003		95	85	58	3,442	192	3,374	0	584	29	2	13	107	1,197
2004		89	83	50	2,304	223	6,517	114	381	16	18	22	249	938
2005		89	81	55	4,004	241	18,427	130	245	56	17	46	101	741
2006		85	82	59	3,208	1,034	17,960	22	191	50	23	55	83	384
2007		78	71	51	3,548	218	20,005	0	582	32	11	21	189	478
2008	[b]	96	87	50	1,808	19	18,876	0	198	34	10	16	78	368
2009	[b]	73	71	35	1,142	2	11,051	13	308	37	9	4	63	239
2010	[b]	93	89	56	1,415	62	15,955	165	254	58	17	41	40	156
2011	[b]	87	85	49	1,138	51	17,851	1	307	64	5	71	120	349
2012	[b]	68	66	32	545	0	18,896	5	232	63	5	5	7	44
2013	[b]	51	47	32	350	116	20,294	150	194	30	5	7	14	77
2003–2007 Average		87	80	55	3,301	382	13,257	53	397	37	14	31	146	748
2008–2012 Average		83	80	44	1,210	27	16,526	37	260	51	9	27	62	231
Subsistence salmon fishery above mainstem Yukon River sonar project near Eagle [b, c]														
2008		26	25	18	815	6	11,755	0	51	16	0	4	0	18
2009		28	28	13	382	0	6,995	0	128	7	8	3	1	15
2010		26	26	20	604	17	11,415	1	106	25	7	1	8	12
2011		27	27	18	370	0	12,477	1	127	22	2	15	12	1
2012		26	24	13	91	0	11,681	0	166	44	1	2	7	16
2013		21	20	15	152	50	12,642	0	64	8	2	0	13	7
2008–2012 Average		27	26	16	452	5	10,865	0	116	23	4	5	6	12

[a] That portion of the Yukon River drainage from Twenty-Two Mile Slough, located downstream of the village of Circle, to the U.S./Canada Border.

[b] Beginning in 2008, permits were issued in a subarea to document harvest above the mainstem Yukon River sonar project operate downstream of Eagle. The number of permits includes duplicate permits issued to households that fished above and below the sonar site. Harvest totals include fish harvested between the sonar and U.S./Canada border to determine border passage for treaty obligations.

[c] Harvest documented above mainstem Yukon River sonar project operate downstream of Eagle. These salmon are also included in Upper Yukon River "Circle-Eagle" totals to maintain historical comparisons.

Appendix B7.–Subsistence fish harvests taken under authority of a permit in the Subdistrict 6A of the Tanana River and the Kantishna River, Yukon Area, 2003–2013.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest									
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose suckers	Arctic grayling
Subdistrict 6-A subsistence salmon fishery [a]													
2003	18	16	9	213	65	1,396	1,006	3	2	0	35	3	0
2004	18	18	8	239	306	1,529	1,419	17	3	0	26	14	0
2005	18	16	11	291	166	3,015	2,414	13	0	0	4	0	0
2006	19	19	15	362	85	3,355	1,546	12	1	1	0	0	0
2007	17	17	12	333	144	3,779	1,482	24	3	4	8	0	0
2008	34	32	17	115	146	2,583	1,987	96	1	1	71	0	0
2009	24	23	16	543	422	4,213	2,369	105	5	2	9	0	0
2010	22	22	11	360	106	3,094	1,963	69	6	0	3	0	0
2011	24	24	16	330	98	4,565	1,435	236	4	6	5	0	0
2012	23	22	11	228	58	2,166	1,374	77	2	14	5	0	2
2013	19	19	12	218	88	1,478	421	18	2	1	6	0	0
2003–2007 Average	18	17	11	288	153	2,615	1,573	14	2	1	15	3	0
2008–2012 Average	25	25	14	315	166	3,324	1,826	117	4	5	19	0	0
Kantishna River subsistence fishery [b]													
2003	5	5	4	63	0	1,049	1,508	37	1	8	23	49	6
2004	5	5	4	100	2	619	585	0	1	1	55	0	1
2005	6	6	4	133	2	1,302	245	58	0	0	41	7	0
2006	5	5	3	141	29	339	737	27	0	34	30	282	0
2007	5	5	2	0	0	0	639	0	0	0	37	0	0
2008	4	3	2	0	0	95	15	0	0	0	10	0	0
2009	4	4	3	0	0	436	311	57	0	32	21	71	0
2010	4	4	3	1	0	82	23	3	0	3	28	0	0
2011	6	5	3	1	49	698	105	28	1	9	33	28	0
2012	3	3	3	0	0	285	51	2	0	1	4	1	0
2013	3	3	2	0	0	314	144	13	0	0	0	0	0
2003–2007 Average	5	5	3	87	7	662	743	24	0	9	37	68	1
2008–2012 Average	4	4	3	0	10	319	101	18	0	9	19	20	0

[a] Portion of the Tanana River drainage from Yukon River confluence to the upstream edge of Kantishna River confluence.

[b] Kantishna River drainage upstream of Tanana River confluence.

Appendix B8.–Subsistence fish harvests taken under authority of a permit in Subdistrict 6B and the Tolovana River drainage, Yukon Area, 2003–2013.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest									
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose suckers	Arctic grayling
Subdistrict 6-B subsistence salmon fishery [a]													
2003	77	72	40	1,839	2,855	10,537	7,849	875	45	37	162	44	5
2004	60	56	30	1,049	1,485	6,805	9,580	933	35	49	58	17	46
2005	70	67	29	1,403	1,846	15,367	9,659	1,652	7	19	82	64	5
2006	78	76	42	423	885	13,047	7,897	763	12	26	88	21	4
2007	79	75	39	1,127	1,750	12,477	4,521	656	17	32	108	26	2
2008	73	71	35	486	854	7,815	4,009	403	0	4	121	21	11
2009	70	69	37	730	830	9,112	4,064	1,073	10	33	25	21	0
2010	93	85	32	583	316	7,625	3,429	496	7	6	18	34	1
2011	86	82	43	684	678	7,463	4,584	641	27	13	4	12	1
2012	85	79	39	375	436	10,428	6,674	550	37	16	62	44	12
2013	93	88	38	148	1,006	9,573	4,583	1,026	7	28	10	11	2
2003–2007 Average	73	69	36	1,168	1,764	11,647	7,901	976	23	33	100	34	12
2008–2012 Average	81	77	37	572	623	8,489	4,552	633	16	14	46	26	5
Tolovana River drainage subsistence fishery [b]													
2003	119	105	57	0	0	0	0	334	63	24	966	88	0
2004	99	91	42	0	0	0	0	110	35	30	393	30	1
2005	79	69	31	1	0	0	0	304	58	0	386	30	0
2006	101	97	56	0	11	6	2	117	2	27	788	9	0
2007	118	109	55	12	2	1	0	137	4	1	1,837	0	0
2008	146	136	79	0	0	0	0	258	3	3	1,339	0	47
2009	112	107	52	0	1	0	0	202	14	6	563	0	0
2010	96	90	42	0	0	0	0	181	39	0	115	9	0
2011	70	69	27	0	0	0	0	36	0	70	100	0	0
2012	73	68	35	0	0	2	0	130	8	6	525	0	0
2013	77	74	45	0	0	60	42	15	1	3	231	9	0
2003–2007 Average	103	94	48	3	3	1	0	200	32	16	874	31	0
2008–2012 Average	99	94	47	0	0	0	0	161	13	17	528	2	9

[a] That portion of the Tanana River drainage upstream of the confluence of the Kantishna River to the upstream edge of the confluence of the Wood River.

[b] Includes the Tolovana River drainage outside of the Fairbanks nonsubsistence area.

Appendix B9.–Subsistence fish harvests taken under authority of a permit in the upper portion of the Tanana River of District 6 and Upper South and Middle Fork Koyukuk River of District 4, Yukon Area, 2003–2013.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest										
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose suckers	Arctic grayling
Upper Tanana River drainage subsistence fishery [a]														
2003	38	32	17	30	0	4	0	1,482	0	14	10	33	5
2004	35	30	14	0	0	0	0	2,346	0	14	26	30	41
2005	29	24	13	0	0	15	0	1,235	0	2	47	61	25
2006	23	22	17	0	0	19	0	1,756	0	0	28	181	83
2007	34	33	17	0	0	41	5	1,786	0	15	19	24	35
2008	58	50	19	0	0	17	6	2,185	0	10	62	27	35
2009	42	40	17	0	0	84	0	2,035	0	0	44	35	98
2010	41	34	19	10	0	12	0	1,594	0	11	13	21	38
2011	41	39	23	0	0	0	0	3,131	0	24	58	78	79
2012	58	49	22	0	0	0	0	2,522	0	10	199	97	31
2013	52	46	16	0	0	0	0	1,314	0	20	130	170	98
2003–2007 Average	32	28	16	6	0	16	1	1,721	0	9	26	66	38
2008–2012 Average	48	42	20	2	0	23	1	2,293	0	11	75	52	56
Upper South and Middle Forks of the Koyukuk River Area subsistence fishery permit area [b]														
2004	NA	NA	NA	0	0	0	0	4	0	0	0	0	4
2005	NA	NA	NA	0	0	0	0	6	0	1	0	22	22
2006	NA	NA	NA	0	0	0	0	0	0	0	0	0	1
2007	NA	NA	NA	0	0	0	0	5	0	0	0	1	10
2008	NA	NA	NA	0	0	0	0	10	0	0	0	15	27
2009	NA	NA	NA	0	0	0	0	4	0	0	0	13	18
2010	NA	NA	NA	0	0	0	0	8	0	0	0	0	0
2011	NA	NA	NA	0	0	0	0	25	0	0	1	20	45
2012	NA	NA	NA	0	0	0	0	11	0	0	1	3	15
2013	NA	NA	NA	0	0	0	0	8	0	6	0	25	25
2003–2007 Average	NA	NA	NA	0	0	0	0	4	0	0	0	6	9
2008–2012 Average	NA	NA	NA	0	0	0	0	12	0	0	0	10	21

Note: NA = data not available. Permit requirement for the South and Middle Fork Koyukuk River area was established in 2004.

[a] That portion of the Tanana River drainage from the mouth of the Volkmar River, including the Volkmar River drainage, on the north bank (right bank) of the Tanana River and the Johnson River, including the Johnson River drainage, on the south bank (left bank) of the Tanana River upstream to the Tanana River drainage headwaters.

[b] That portion of the South Fork of the Koyukuk River drainage upstream from the mouth of the Jim River and the Middle Fork of the Koyukuk River drainage upstream from the mouth of the North Fork River.

Appendix B10.–Personal use fish harvests taken under authority of a permit in Subdistrict 6C of the Tanana River Yukon Area, 2003–2013.

Year	Number of permits issued	Number of permits returned	Number reporting harvest	Reported harvest									
				Chinook	Summer chum	Fall chum	Coho	Whitefish	Sheefish	Burbot	Northern pike	Longnose sucker	Arctic grayling
Subdistrict 6C personal use salmon fishery [a]													
2003	67	67	32	204	148	394	549	2	1	0	0	0	0
2004	68	66	35	201	231	230	233	0	1	0	0	1	0
2005	63	59	27	138	152	133	107	3	3	3	1	0	0
2006	60	60	35	89	262	333	279	14	5	1	2	0	0
2007	65	63	32	136	184	173	135	4	1	0	1	0	0
2008	51	50	25	126	138	181	50	13	2	0	2	0	0
2009	57	57	22	127	308	71	65	2	1	0	0	1	0
2010	67	67	38	162	319	3,208	1,062	192	0	3	6	9	5
2011	67	64	33	89	439	347	232	20	1	1	0	0	0
2012	60	59	29	71	321	410	100	3	0	0	0	0	0
2013	53	52	29	42	138	363	124	24	1	0	0	0	3
2003–2007 Average	65	63	32	154	195	253	261	5	2	1	1	0	0
2008–2012 Average	60	59	29	115	305	843	302	46	1	1	2	2	1
Upper Tanana River personal use whitefish/sucker fishery [b]													
2003	7	5	NA	0	0	0	0	20	0	5	0	135	7
2004	NA	NA	NA	0	0	0	0	51	0	0	0	0	0
2005	10	10	5	0	0	0	0	81	0	4	1	403	3
2006	7	7	NA	0	0	0	0	273	0	3	0	184	1
2007	NA	NA	NA	0	0	0	0	0	0	0	0	0	0
2008	6	6	NA	0	0	0	0	28	0	0	0	157	0
2009	11	11	6	0	0	7	5	46	0	0	0	314	0
2010	8	6	NA	0	0	1	0	14	1	0	1	57	0
2011	7	7	5	0	0	0	0	42	0	0	0	142	0
2012	12	11	NA	0	0	0	0	19	0	0	0	233	0
2013	14	14	7	0	0	20	8	65	0	1	3	118	0
2003–2007 Average	6	5	3	0	0	0	0	85	0	2	0	144	2
2008–2012 Average	9	8	4	0	0	2	1	30	0	0	0	181	0

Note: NA = data not available.

[a] That portion of the Tanana River drainage from the upstream edge of the mouth of the Wood River, not including the Wood River drainage, to the upstream edge of the mouth of the Salcha River, including the Salcha River drainage. This permit is issued to harvest salmon but requires reporting of incidental harvest of non-salmon species.

[b] Portion of the Tanana River drainage from the upstream edge of the mouth of the Wood River, not including the Wood River drainage, to the mouth of the Volkmar River on the north bank (right bank) of the Tanana River and upstream to the Johnson River on the south bank (left bank) of the Tanana River. This permit is issued for the harvest whitefish species and longnose suckers but requires reporting incidental fish harvests.

Appendix B11.–Estimated pink salmon subsistence harvest by residents of surveyed communities, with community and district totals, Yukon Area, 2003–2013.

												Estimated total		
Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012[a]	2013	Even years average	Odd years average	All years average
Hooper Bay	473	5,418	860	1,433	113	1,013	957	219	210	1,101	302	1,837	523	1,570
Scammon Bay	997	2,508	1,645	1,381	1,435	2,766	1,186	2,245	1,888	1,343	507	2,049	1,430	1,619
Coastal District	1,470	7,926	2,505	2,814	1,548	3,779	2,143	2,464	2,098	2,444	809	4,575	1,953	3,189
Nunam Iqua	5	32	132	555	170	757	61	306	8	1,051	0	540	75	281
Alakanuk	0	233	49	115	32	494	24	151	13	174	92	233	24	129
Emmonak	4	32	54	225	51	641	5	206	0	199	0	261	23	132
Kotlik	198	318	155	219	129	1,161	42	124	32	195	23	403	111	311
District 1	207	615	390	1,114	382	3,053	132	787	53	1,619	115	1,438	233	853
Mountain Village	117	891	78	616	87	500	6	217	24	207	0	486	62	317
Pitkas Point	0	0	2	44	66	15	0	143	0	2	2	41	14	28
St. Marys	0	137	144	236	32	367	5	543	1	643	0	385	36	192
Pilot Station	0	5	0	1	0	34	3	22	0	23	131	17	1	10
Marshall	0	105	6	3	0	26	0	21	66	5	7	32	14	64
District 2	117	1,138	230	900	185	942	14	946	91	880	140	961	127	611
Russian Mission	0	6	0	8	3	436	0	2	0	76	12	106	1	48
Holy Cross	0	0	0	17	0	20	0	0	0	0	0	7	0	3
Shageluk	130	0	0	0	0	0	9	0	9	24	0	5	30	16
District 3	130	6	0	25	3	456	9	2	9	100	12	118	30	67
Anvik	240	0	0	0	0	23	2	0	0	0	0	5	48	24
Grayling	3	0	3	0	0	200	0	0	40	0	0	40	9	25
Kaltag	0	10	4	0	0	383	0	0	0	0	0	79	1	36
Nulato	0	0	0	1	0	35	0	0	0	0	0	7	0	8
Koyukuk	0	0	0	0	0	67	0	0	0	0	0	13	0	6
Galena	0	0	0	0	0	31	0	0	0	3	0	7	0	8
Ruby	0	2	0	0	0	184	0	0	0	0	0	37	0	25
Huslia	0	0	0	0	0	100	0	0	0	101	0	40	0	18
Hughes	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Allakaket	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alatna	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bettles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 4	243	12	7	1	0	1,023	2	0	40	104	0	228	58	150

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Community	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012[a]	2013	Estimated total: Even years average	Estimated total: Odd years average	Estimated total: All years average
Tanana	0	0	0	0	0	80	0	0	0	3	0	17	0	8
Stevens Village	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Birch Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Beaver	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Yukon	0	0	0	0	0	196	0	0	0	0	0	39	0	18
Venetie	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chalkyitsik	0	0	0	0	0	0	0	0	0	0	0	0	0	0
District 5	0	0	0	0	0	276	0	0	0	0	0	55	0	25
Survey totals	2,167	9,697	3,132	4,854	2,118	9,529	2,300	4,199	2,291	5,147	1,076	6,685	2,402	4,896
CI (95%)	964	2,829	1,521	990	739	1,818	1,184	1,209	918	918	918	–	–	–

Note: CI (95%) is the annual 95% confidence interval. Dashes indicate indefinable values. In 2013, the Alaska Board of Fisheries defined amounts necessary for subsistence (ANS) as 2,100–9,700 pink salmon.

[a] Includes 216 test fish given to communities.

Appendix B12.–Households with dogs, number of dogs, and salmon fed to dogs, as estimated in surveyed communities or reported in permit areas, Yukon Area, 2008–2013.

Districts survey or permit and year	Number of households with dogs	Number of dogs	Summer chum salmon fed to dogs	Fall chum salmon fed to dogs	Coho salmon fed to dogs	Total salmon fed to dogs
2008						
Coastal District survey	155	325	141	0	0	141
District 1 survey	304	595	110	0	0	110
District 2 survey	277	546	53	131	136	320
District 3 survey	110	314	72	157	0	229
District 4 survey	395	1,178	11,416	10,342	650	22,408
District 5 survey	244	887	2,575	27,958	2,346	32,879
District 5 permit [a, b]	55	552	–	–	–	14,103
District 6 permit [b]	186	882	–	–	–	10,345
Totals	1,726	5,279	14,367	38,588	3,132	80,535
2009						
Coastal District survey	104	133	0	0	0	0
District 1 survey	228	390	632	75	0	707
District 2 survey	269	457	100	0	44	144
District 3 survey	90	237	0	160	72	232
District 4 survey	371	938	12,973	2,855	2,502	18,330
District 5 survey	231	913	3,385	20,459	1,678	25,522
District 5 permit [a, b]	47	522	–	–	–	7,649
District 6 permit [b]	155	630	–	–	–	14,253
Totals	1,495	4,220	17,090	23,549	4,296	66,837
2010						
Coastal District survey	207	410	118	0	0	118
District 1 survey	299	595	20	0	0	20
District 2 survey	284	494	27	0	104	131
District 3 survey	85	235	63	61	183	307
District 4 survey	379	990	6,111	2,551	595	9,257
District 5 survey	255	910	2,024	21,167	2,207	25,398
District 5 permit [a, b]	59	432	–	–	–	13,707
District 6 permit [b]	184	998	–	–	–	12,011
Totals	1,752	5,064	8,363	23,779	3,089	60,949
2011						
Coastal District survey	174	341	0	0	0	0
District 1 survey	264	502	85	0	0	85
District 2 survey	275	524	111	70	115	296
District 3 survey	112	280	528	9	0	537
District 4 survey	413	1,028	9,743	1,359	1,150	12,252
District 5 survey	272	1,282	6,798	32,224	1,156	40,178
District 5 permit [a, b]	55	363	–	–	–	15,759
District 6 permit [b]	162	1,033	–	–	–	15,140
Totals	1,727	5,353	17,265	33,662	2,421	84,247

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Districts survey or permit and year	Number of households with hogs	Number of dogs	Summer chum salmon fed to dogs	Fall chum salmon fed to dogs	Coho salmon fed to dogs	Total salmon fed to dogs
2012						
Coastal District survey	181	397	524	0	0	524
District 1 survey	279	582	90	43	22	155
District 2 survey	211	508	396	5	51	452
District 3 survey	86	303	2,553	5	6	2,564
District 4 survey	440	2,037	19,719	6,680	84	26,483
District 5 survey	243	917	4,772	30,569	2,409	37,750
District 5 permit [a, b]	48	480	–	–	–	16,404
District 6 permit [b]	167	947	–	–	–	14,566
Totals	1,655	6,171	28,054	37,302	2,572	98,898
2013						
Coastal District survey	215	467	14	28	0	42
District 1 survey	308	567	489	0	0	489
District 2 survey	300	530	226	149	0	375
District 3 survey	82	185	103	0	0	103
District 4 survey	418	1,138	10,387	5,740	4,066	20,193
District 5 survey	271	984	7,671	45,510	191	53,372
District 5 permit [a, b]	24	257	–	–	–	17,663
District 6 permit [b]	156	879	–	–	–	7,210
Totals	1,774	5,007	18,890	51,427	4,257	99,447
5-year average 2008–2012						
Coastal District survey	164	321	157	0	0	157
District 1 survey	275	533	187	24	4	213
District 2 survey	263	506	137	41	90	269
District 3 survey	97	274	643	78	52	774
District 4 survey	400	1,234	11,992	4,757	996	17,746
District 5 survey	249	982	3,911	26,475	1,959	32,345
District 5 permit [a, b]	53	441	–	–	–	13,524
District 6 permit [b]	171	868	–	–	–	13,263
Totals	1,639	5,163	17,028	31,376	3,102	76,481

Note: Dashes indicate information was not collected.

[a] Permit totals do not include the community of Stevens Village.

[b] Does not include duplicate information from households with more than 1 permit.

Appendix B13.–Estimated and reported subsistence and personal use harvest of miscellaneous fish species, Yukon Area, 2003–2013.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	5-year average 2003–2007	5-year average 2008–2012
Survey estimates [a]													
Northern pike	22,341	18,738	29,799	28,133	25,947	16,053	8,061	14,086	14,270	18,450	11,264	24,992	14,184
Sheefish	14,280	16,896	13,764	12,745	13,203	10,154	7,861	9,231	10,139	17,094	15,553	14,178	10,896
Whitefish [b]	68,416	64,039	48,862	60,923	64,338	54,729	51,778	50,232	44,890	70,486	64,766	61,316	54,423
Survey reported													
Alaska blackfish	161,703	229,833	259,874	218,695	131,712	110,356	47,320	68,873	87,064	62,731	63,235	200,363	75,269
Arctic char	376	116	217	345	181	184	43	148	205	216	167	247	159
Arctic grayling	2,421	1,645	1,258	1,145	2,296	857	667	1,571	1,273	2,674	1,435	1,753	1,408
Arctic lamprey [c]	29,886	33,919	38,115	2,092	12,584	803	1,699	10,863	6,037	1,243	3,590 [d]	23,319	4,129
Burbot	3,000	2,628	3,138	5,069	3,500	3,273	2,027	2,743	2,477	2,422	2,115	3,467	2,588
Longnose suckers	234	178	1,452	105	225	25	59	273	286	95	180	439	148
Pacific herring [e]	–	–	–	–	–	–	–	–	–	10,449	9,082	–	–
Pacific halibut [e]	–	–	–	–	–	–	–	–	–	21	551	–	–
Sockeye salmon	–	787	648	333	493	213	216	263	279	405	258	565	275
Tomcod	4,608	5,649	4,988	13,652	7,121	6,391	2,709	3,978	6,797	4,023	5,221	7,204	4,780
Permit reported													
Arctic grayling	1,228	1,032	800	507	525	488	363	201	475	104	207	818	326
Burbot	129	127	78	127	99	89	119	45	140	58	68	112	90
Longnose suckers	978	341	694	770	243	298	518	170	414	396	347	605	359
Northern pike	1,266	606	641	1,008	2,094	1,678	733	257	319	825	403	1,123	762
Sheefish	203	97	155	80	83	111	76	121	103	147	48	124	112
Whitefish [b]	5,508	4,402	3,671	3,399	3,328	3,402	4,039	3,040	4,851	3,966	2,766	4,062	3,860
Yukon Area totals from survey and permit harvests													
Arctic grayling	3,649	2,677	2,058	1,652	2,821	1,345	1,030	1,772	1,748	2,778	1,642	2,571	1,735
Burbot	3,129	2,755	3,216	5,196	3,599	3,362	2,146	2,788	2,617	2,480	2,183	3,579	2,679
Longnose suckers	1,212	519	2,146	875	468	323	577	443	700	491	527	1,044	507
Northern pike	23,607	19,344	30,440	29,141	28,041	17,731	8,794	14,343	14,589	19,275	11,667	26,115	14,946
Sheefish	14,483	16,993	13,919	12,825	13,286	10,265	7,937	9,352	10,242	17,241	15,601	14,301	11,007
Whitefish [b]	73,924	68,441	52,533	64,322	67,666	58,131	55,817	53,272	49,741	74,452	67,532	65,377	58,283

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Note: Dashes indicate information was not collected.

[a] Subsistence whitefish, pike, and sheefish harvests are estimated by the annual subsistence household survey using methods targeted for salmon harvest estimates.

[b] Whitefish includes various *Coregonus* species and round whitefish (*Prosopium cylindraceum*). Categories of large (greater than 4 pounds) and small (less than 4 pounds) whitefish are combined.

[c] Harvest of Arctic lamprey reported on surveys is from October to December of the previous year.

[d] Includes Arctic lamprey harvest from postcards. Duplicate Arctic lamprey harvest was removed from households that provided lamprey information on surveys and postcards.

[e] Households in the Coastal District and District 1 were asked about their harvest of Pacific halibut and Pacific herring starting in 2012 during the postseason survey. Herring harvest information was previously collected using questionnaires (Estensen et al. 2013) and reported as short tons in harvest reports. Household harvest reports of flounder or smelt was included in halibut or herring reported numbers.

Appendix B14.–Households responses assessing their success of subsistence salmon needs being met (in percent), by species, Yukon Area, 2008–2013.

Year	Total households	Households contacted	Total number of household responses [a]	Household responses indicated ≤ 50% needs met		Household responses indicated > 50% needs met	
				Responses	Percent	Responses	Percent
Chinook salmon							
2008	2,470	1,153	970	488	50%	482	50%
2009 [b]	2,366	1,036	618	457	74%	161	26%
2010 [b]	2,528	1,153	517	317	61%	200	39%
2011 [b]	2,568	1,094	718	388	54%	330	46%
2012 [b]	2,655	1,125	723	513	71%	210	29%
2013 [b]	2,751	1,193	769	608	79%	161	21%
2008–2012 Avg	2,517	1,112	709	433	62%	277	38%
Summer chum salmon							
2008	2,470	1,153	685	265	39%	420	61%
2009 [b]	2,366	1,036	382	228	60%	154	40%
2010 [b]	2,528	1,153	363	203	56%	160	44%
2011 [b]	2,568	1,094	436	157	36%	279	64%
2012 [b]	2,655	1,125	494	198	40%	296	60%
2013 [b]	2,751	1,193	510	178	35%	332	65%
2008–2012 Avg	2,517	1,112	472	210	46%	262	54%
Fall chum salmon							
2008	2,470	1,153	470	289	61%	181	39%
2009 [b]	2,366	1,036	196	165	84%	31	16%
2010 [b]	2,528	1,153	133	100	75%	33	25%
2011 [b]	2,568	1,094	253	139	55%	114	45%
2012 [b]	2,655	1,125	275	176	64%	99	36%
2013 [b]	2,751	1,193	353	162	46%	191	54%
2008–2012 Avg	2,517	1,112	265	174	68%	92	32%
Coho salmon							
2008	2,470	1,153	272	204	75%	68	25%
2009 [b]	2,366	1,036	103	90	87%	13	13%
2010 [b]	2,528	1,153	85	56	66%	29	34%
2011 [b]	2,568	1,094	112	55	49%	57	51%
2012 [b]	2,655	1,125	114	79	69%	35	31%
2013 [b]	2,751	1,193	136	67	49%	69	51%
2008–2012 Avg	2,517	1,112	137	97	69%	40	31%

[a] Total number of households surveyed who answered this question and includes households that did not fish.

[b] Beginning in 2009 the question was changed from asking households to give a percentage of needs met, to asking households how many salmon they usually harvest or need to receive to meet subsistence needs. Percentage of needs met was calculated from the response and the number of salmon harvested or received.